

Frontiers

www.boeing.com/frontiers



FUEL AND FLY 23

KC-767 Tanker makes 1st fuel transfer

SALES TO TAILS 30

What's next after **BCA's 2** great years

A SPECIAL TRIP 38

Boeing helps post-tsunami recovery

POWER PLAY

Global Strike Systems' products help support defense departments and ministries worldwide.



WHAT WILL YOU CREATE FOR OUR WORLD?

YOU MAY NOT ALWAYS SEE US, but we're in the sky, on the ground, at sea and out in space; with your help our technologies will benefit the world. That's why we're here. The job categories below reflect skills we are seeking for various positions in Alabama, Arizona, California, Colorado, Florida, Kansas, Maryland, Missouri, Oklahoma, Pennsylvania, Texas, Virginia and Washington. To view the available jobs at each location and to apply, visit: boeing.com/careers

- AVIONICS - FLIGHT TEST
- COMMUNICATION SYSTEMS - MILSATCOM/
NETWORK/SATELLITE/WIRELESS
- ELECTRICAL ENGINEERING - COMPONENTS
- ELECTRONIC WARFARE
- FINANCE/ACCOUNTING/PLANNING/SCHEDULING/
ESTIMATING/PRICING/EVMS
- FLIGHT CONTROL LAW ENGINEERING
- GIS/IMAGERY
- GROUND MISSILE DEFENSE/GROUND-BASED MISSILES
- INFORMATION TECHNOLOGY
- MECHANICAL ENGINEERING - EM/STRUCTURAL/
DYNAMIC/THERMAL/STRESS
- MODELING & SIMULATION
- NETWORK ARCHITECT/NETWORK SECURITY
- NETWORKING/EMBEDDED/WEB/ARCHITECTURE
- OPERATIONAL CONCEPT ANALYSIS
- PAYLOAD SYSTEMS - SPACECRAFT/SATELLITE/AIRCRAFT
- PRODUCT REVIEW ENGINEER (LIAISON/MRB ENGINEER)
- QUALITY ENGINEERING
- RADAR DESIGN/ANALYSIS
- SIGNAL PROCESSING - SONAR/RADAR/DSP/
SIGINT SYSTEMS
- SOFTWARE ENGINEERING - REAL-TIME
- SYSTEMS ENGINEERING

Apply at: boeing.com/careers

To view a comprehensive listing of all available positions, please visit: boeing.com/employment. Security clearance requirements are indicated in the position listings. U.S. citizenship is necessary for all positions requiring a security clearance.

Boeing is an equal opportunity employer supporting diversity in the workplace.



This image, from the "Epic" recruitment advertising campaign, is part of Boeing's efforts to attract a talented, diverse group of college and experienced professionals, and encourage them to explore a career with Boeing. The skill sets listed demonstrate the breadth and depth of Boeing opportunities. The ad directs candidates to view detailed job descriptions and apply online at: boeing.com/careers.



ON THE COVER: A Boeing T-45 Goshawk takes off from an aircraft carrier.
Photo by Ron Bookout

Frontiers



KEVIN FLYNN PHOTO

**COVER
STORY**

ON TARGET 12

Boeing's Global Strike Systems organization designs and manufactures fighters, bombers, weapons and unmanned systems. These products help U.S.-allied defense departments and ministries support freedom worldwide.

**A TRIP
OF HOPE**

38 A Boeing team recently visited Indonesia to see how support from Boeing and its employees and retirees has been helping people affected by the 2004 tsunami. What they found were compelling tales of people determined not merely to recover—but to triumph.

**FEATURE
STORY**

23

The first Boeing KC-767 Tanker (right) destined for the Italian Air Force makes its first in-flight fuel transfer. During this refueling mission, the tanker made 73 contacts with a B-52 (left) and transferred nearly 10,000 pounds of fuel.

U.S. AIR FORCE PHOTO BY JET FABARA



INTEGRATED DEFENSE SYSTEMS

Meeting emerging needs

20 The acquisition of four C-17 Globemaster IIIs marks the next step in the long-time partnership between Boeing and Canada. Here's a look at what Boeing is doing to support a customer whose defense needs are growing.

Banding together

22 How does space exploration affect our lives? Boeing is part of a coalition that aims to educate the public and the U.S. Congress about the relevance and importance of a vibrant space program. Indeed, Boeing representatives are in key roles in complementary teams on the coalition.

It's official!

23 On consecutive days in early March, the KC-767 Tanker made its first two fuel transfers—meaning that the aircraft has shown it can fulfill its refueling mission. Teammates involved in the milestone missions said the tanker aircraft and its systems performed extremely well.

A rich experience

24 Sublieutenant Yashu Aggarwal of the Indian Navy has been training in the Boeing-built T-45 Goshawk with the U.S. Navy's Naval Air Training Command at Naval Air Station Kingsville, near Corpus Christi, Texas. Here's a look at his experiences with the aircraft and in the training program.

INSIDE

6 Letters
7 Notebook

8 Historical Perspective
10 New and Notable

44 Focus on Finance
46 Milestones

49 Around Boeing
50 Spotlight

30

London-based Sales director Debra Santos says it's important for her not only to understand what her customers' business requirements are—but also to know how to work with people.



ADRIAN BROOKS PHOTO

COMMERCIAL AIRPLANES

Maintaining momentum

30 Commercial Airplanes set successive single-year sales records in 2005 and 2006. Now come the next challenges: The business unit must deliver on existing customer commitments and meet customer needs.

Past, present and future

34 As Alaska Airlines commemorates its 75th anniversary this year, it will keep looking ahead. This all-Boeing operator continues to remain at the forefront of innovation by focusing on the customer experience and making the most out of technology.

Seeds of hope

37 A chance meeting between an airline executive and a Kenyan student flying to the United States set the stage for Boeing to participate in building a new school—and creating opportunities for Kenya's youths.

34

Andy Leiper, looking at a 737 landing gear at the Boeing factory in Renton, Wash., is an Alaska Airlines company acceptance inspector. Boeing is expected to deliver 14 airplanes to the carrier in 2007.



JIM COLEY PHOTO

COMPANYWIDE

Still contributing

29 Carl Vorst is an inventor at Boeing who's aimed high and succeeded in his career at Boeing. He's made many contributions as an inventor, as a teacher and as a member of his community—all of which reflect the Boeing leadership attributes.

FOCUS ON FINANCE

The Lean machine

44 There's something interesting about the process streamlining at Boeing Capital Corp. Instead of choosing areas to apply Lean principles, the BCC team is making improvements to its businesswide processes.

Frontiers

Publisher: Tom Downey
Editorial director: Jo Anne Davis

EDITORIAL TEAM

Editor:
 Paul Proctor: (312) 544-2938
Managing editor:
 Junu Kim: (312) 544-2939
Designers:
 Heather Dubinkas: (312) 544-2118
 Cal Romaneschi: (312) 544-2930
Commercial Airplanes editor:
 Dick Schleh: (206) 766-2124
Integrated Defense Systems editor:
 Diane Stratman: (562) 797-1443
Engineering, Operations and Technology editor:
 William Cole: (314) 232-2186
Shared Services editor:
 Mick Boroughs: (206) 919-7584
Copy editor:
 Walter Polt: (312) 544-2954

CONTRIBUTING EDITORS

Boeing Capital Corp.:
 Donna Mikov: (425) 965-4057

ONLINE PRODUCTION

Production manager:
 Alma Dayawon: (312) 544-2936
Web designer:
 Michael Craddock: (312) 544-2931
Graphic artists:
 Heather Dubinkas: (312) 544-2118
 Cal Romaneschi: (312) 544-2930
Web developers:
 Lynn Hesby: (312) 544-2934
 Keith Ward: (312) 544-2935
Information technology consultant:
 Tina Skelley: (312) 544-2323

How to contact us:

E-mail:
 BoeingFrontiers@boeing.com
Mailing address:
 Boeing Frontiers
 MC: 5003-0983
 100 N. Riverside Plaza
 Chicago, IL 60606
Phone:
 (312) 544-2954
Fax:
 (312) 544-2078
Web address:
 www.boeing.com/frontiers

Send all retiree address changes to
 Boeing Frontiers, MC 3T-12
 P.O. Box 3707
 Seattle, WA 98124-2207

Postmaster: Send address corrections to
 Boeing Frontiers, MC 3T-12
 P.O. Box 3707, Seattle, WA 98124-2207
 (Present addressees, include label)

AWACS on his radar

Great story on the Airborne Warning and Control System in the March 2007 *Frontiers*. It was a super update on the AWACS program and provided several tidbits I didn't know. I especially liked the image of that initial configuration, which I'd never seen.

—Bill Scott
 Colorado Springs, Colo.

What about fuel economy?

I was disappointed to see two low fuel-efficiency sport utility vehicles shown in the story on Employee Discount Programs (March 2007). According to the U.S. Environmental Protection Agency's 2007 fuel economy guide, the Jeep Grand Cherokee you pictured gets about 15 miles per gallon in city driving (depending on the model's engine size and other factors), while the Dodge Nitro gets 18 mpg in the city. What about small cars, hybrids or fuel-efficient sedans? There are discounts for those, too.

If Boeing is serious about its "Principles for Safety Health and the Environment"—which states, "We promote and support the safety, health, and well-being of our communities, our families, and ourselves. Each of us is responsible for safety, health, and environmental excellence"—then it needs to be more proactive in promoting programs that encourage and help employees change the way they affect the environment. One of the most effective ways to do that is to change the cars we drive. How about a program that offers additional incentives for employees who buy fuel-efficient cars?

The corporation can help by investing time and money into

"I especially liked the image of the [AWACS'] initial configuration, which I'd never seen."

—Bill Scott, Colorado Springs, Colo.



of vehicles that suit the varying needs of individual car buyers. And certainly, we are committed to supporting Boeing's environmental efforts.

Hot idea in deicing

I believe an opportunity exists for Boeing to introduce a deicing system for commercial airplanes using solar energy. Airlines become paralyzed when winter weather hits. The current method of deicing aircraft with heated glycol is expensive, time consuming, and environ-

mentally unfriendly.

Using solar cells to generate enough power on aircraft lifting surfaces to keep the temperature above the freezing point would be a viable alternative to current deicing systems. The cells could be arrayed and blended into the aircraft wings and tails to generate a heated surface and prevent ice buildup. Excess power generated from the solar cells could then be routed to the aircraft bus bar to power equipment that can monitor external skin temperatures.

NASA has proven that solar powered flight is possible. Boeing can revolutionize the industry by building aircraft that are self-deicing, environmentally friendly and efficient to operate.

—Richard Loftis
 Seattle

ways to promote more fuel-efficient cars for its employees (and its own fleets). *Frontiers* can help by showing alternatives to the current status quo of inefficient vehicles.

—Chris Eastland
 Everett, Wash.

Editor's note: We recognize your concerns about the vehicles shown in the story and apologize if you feel these choices reflect a lack of environmental concern. Our reasoning for choosing the vehicles depicted was we wanted to show makes that were identifiable as being products of manufacturers participating in the Employee Discount Program.

That said, we certainly do not want to give the impression that we are promoting one type of vehicle over another. The program offers a wide range

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

TAILS, WE WIN Nearly 1,000 people got an up-close look at the Boeing-made first composite 787 vertical fin during a rollout event March 14 at the Composite Manufacturing Center in Frederickson, Wash. Attending the event were those whose efforts helped build the 787 vertical fin, including employees from across Boeing and their partners from 14 major suppliers in China and the United States, as well as government and community officials.

JIM ANDERSON PHOTO

QUOTABLE

The temptation to cut corners is always there. ... You have to fight it every day.”

—Jim McNemey, Boeing chairman, president and CEO, on the importance of ethics in the workplace, in the Feb. 26 *USA Today*

They’re over a year away from first delivery and closing in on 500 orders. That’s unprecedented.”

—Richard Aboulafla, an analyst with Teal Group, on the Boeing 787 Dreamliner, in a March 12 Associated Press report

We’re right where we need to be to deliver this sophisticated technology to the warfighter in a timely manner.”

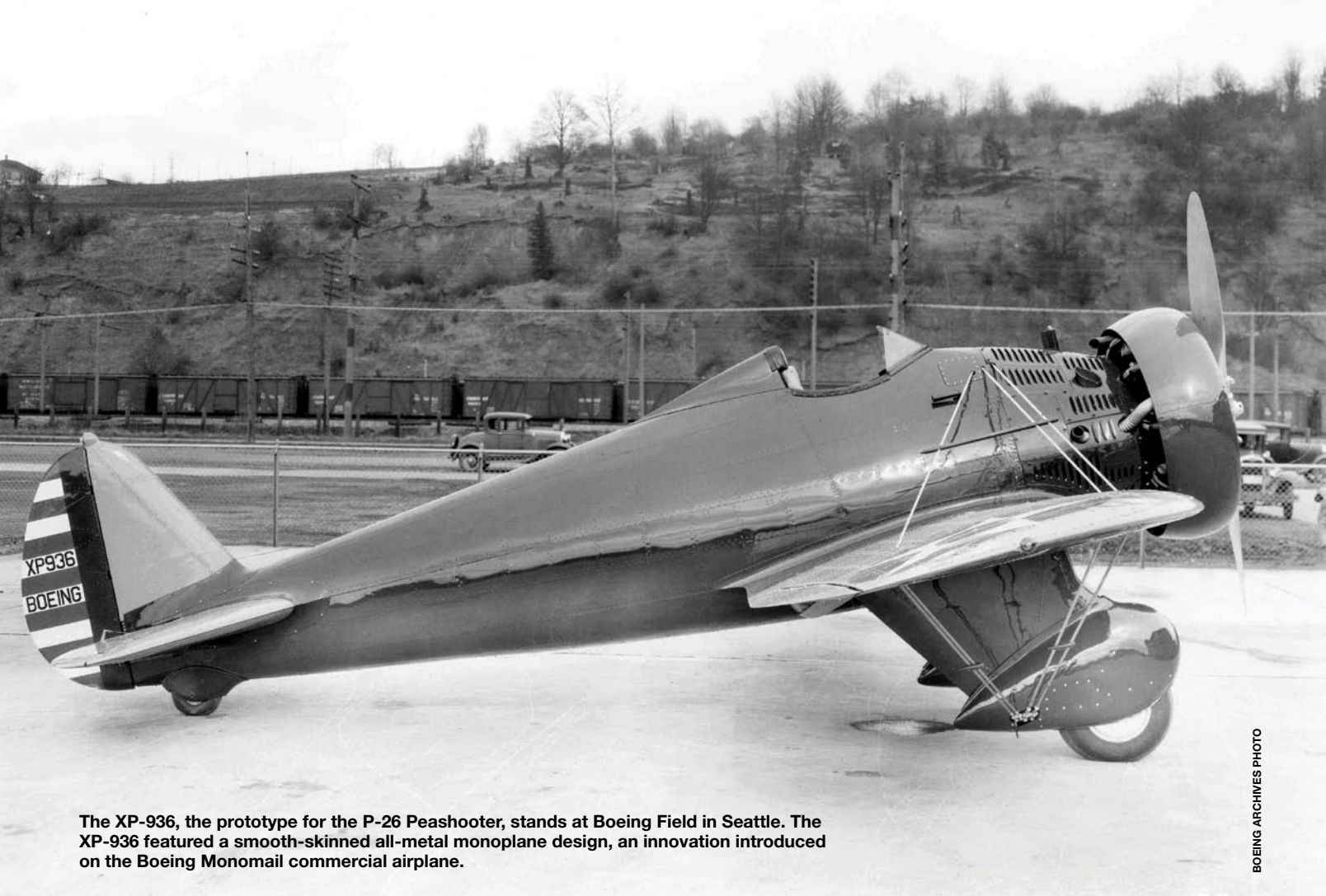
—Jim Dodd, Boeing program manager for the Family of Advanced Beyond line-of-sight Terminals program, in the March 15 *C4I News*

IAM PROMOTIONS

No promotions listed for periods ending Feb. 23 and March 2, 9, 16 and 23.

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; Web site: <http://ethics.whq.boeing.com>



BOEING ARCHIVES PHOTO

The XP-936, the prototype for the P-26 Peashooter, stands at Boeing Field in Seattle. The XP-936 featured a smooth-skinned all-metal monoplane design, an innovation introduced on the Boeing Monomail commercial airplane.

The Peashooter's legacy

How the P-26 brought updated technology to U.S. fighter aircraft

By MICHAEL LOMBARDI

This year's introduction of the revolutionary 787 will be the latest milestone in Boeing's heritage of standard-setting innovative airplanes. A good

example of an earlier pacesetter flew for the first time 75 years ago: the legendary P-26 "Peashooter," the first production all-metal monoplane fighter for the U.S. military.

For more than 70 years, Boeing has been a leader in the design and production of large airplanes. With North American Aviation and McDonnell Douglas being among Boeing's predecessor companies, Boeing is also known for some of the most dominant fighter planes in modern history: the P-51 Mustang, F-86 Sabre, F-4 Phantom, F-15 Eagle and F/A-18 Hornet.

But this isn't the first time Boeing has been associated with leading-edge fighter planes. During the 1920s, the Boeing family of fighters, in particular the U.S. Army P-12 and U.S. Navy/Marine Corps F-4B series, were arguably the best in the world.

While the Boeing Airplane Company was building these biplane fighters, the company was also developing technologically advanced airplanes. Among them: the Boeing Monomail, which introduced for the first time in a commercial airplane innovations such as an all-metal semi-

monocoque (outer skin carrying the stress) fuselage with a smooth skin surface, cantilevered wings and retractable landing gear. Boeing also applied these innovations to a new military plane, the B-9 bomber, which became the first all-metal monoplane bomber in the United States.

The introduction of fast monoplane bombers such as the B-9, which could keep pace with the pursuit planes of the period (“pursuit” was the term used at that time for what we call “fighter” planes today), led some strategists to propose that pursuit planes were becoming obsolete.

In September 1931, Boeing set out to remedy this situation and began development of the Model 248, at the company’s own expense. This new pursuit design incorporated many of the innovations introduced on the Boeing Monomail—especially the smooth-skinned all-metal monoplane design. The Army Air Corps helped Boeing by supplying engines for three prototypes that were given the Air Corps designation XP-936.

The wire bracing on the wings of the P-26 and the fixed landing gear were steps backward from the cantilever wings and retractable landing gear of the Monomail. These design compromises decreased the weight and complexity of the airplane while increasing its performance.

On March 20 (some accounts say March 10), 1932, at Boeing Field in Seattle, the new pursuit plane made its first flight. In June the Army Air Corps bought the prototypes and assigned them the des-

ignation XP-26 (and later Y1P-26) and followed that with an order for 111 airplanes designated P-26A.

The P-26, known as “the Peashooter,” was a small airplane with a wing span slightly less than 28 feet (8.5 meters) and a length of 23 feet 9 inches and a height of 10 feet (7.2 by 3 meters). Powered by a 600hp Pratt & Whitney R-1340 engine, the P-26 had a top speed of 234 mph (377 kilometers per hour) and was nearly 40 mph (64 kilometers per hour) faster than the best U.S. pursuit planes of the day.

The excellent performance of the P-26 led the Army Air Corps to purchase 25 additional P-26s. The first two were delivered with a new fuel-injected engine and were designated P-26B; the rest that followed were designated P-26Cs.

Boeing also built the Model 281, an export version of the P-26. Ten Model 281s were sold to China, and one more was taken to Europe for a sales demonstration by Boeing test pilot Les Tower and Boeing Sales Manager Erik Nelson. When the plane was demonstrated outside of Madrid, it was acquired by the Spanish government and was used in combat during that nation’s civil war.

By the start of World War II, the P-26 had been retired from frontline U.S. service. But a few were stationed at Wheeler Field in Pearl Harbor on Dec. 7, 1941, and a number of others had been transferred to the Philippines and Guatemala. The P-26s flown by the Philippine Army Air Corps did see short but intense combat. Even though these air-

craft were outmatched by the modern Mitsubishi A6M Zero fighters, the Filipino pilots managed to score several victories.

Today, only two original P-26s survive. One is on display at the Smithsonian National Air and Space Museum’s Udvar-Hazy Center near Washington, D.C. The other is part of the Planes of Fame collection at Chino, Calif. A third example can be seen at the National Museum of the U.S. Air Force near Dayton, Ohio. While it’s not an original, it was built using data from Boeing’s archives and was given the next serial number in the Boeing production run.

While the innovations introduced by the Boeing Monomail and P-26 set the pattern for future single-engine monoplane fighters, Boeing did not receive any more production contracts for its designs and eventually bowed out of the fighter business. Boeing had learned from its experience with the B-9 that the technologies of all-metal monoplanes could be applied to larger airplanes with excellent results. This experience, along with a realignment of the company after the breakup of United Aircraft and Transport Corporation, set Boeing into a new direction of specializing in multiengine monoplanes—the “Big Boeings,” as they would be called.

That led to the Model 299, prototype for the B-17 Flying Fortress, followed by the Model 307 Stratoliner—the world’s first pressurized commercial airplane—and the 314 Clipper. These and more airplanes represent the proud lineage of the 787. ■

michael.j.lombardi@boeing.com



The last flyable P-26 in the world takes to the air at last May’s Planes of Fame Air Show in Chino, Calif.

ERIK SIMONSEN PHOTO

A stronger chain

With new designation, Boeing cuts customs delays and supports U.S. security acts

BY JEFF WOOD

For most of us, increased security and increased delay seem to be two sides of the same coin. Yet, the need to increase security against the threat of terrorism is undeniable.

The United States' recent passage of the Security and Accountability For Every Port (SAFE Port) Act underscores the sense of urgency. New security standards released by the International Standards Organization reflect industry's recognition of the need to manage the risk of disruption from a variety of causes, including natural disaster, geopolitical turmoil, contagion and epidemic, and terrorism.

But improving security while avoiding costly delays is exactly what Boeing is doing, said Ken Konigsmark, manager of Boeing's Supply Chain Security organization. As proof of this, U.S. Customs and Border Protection recently granted Boeing a critical designation that helps expedite

the importing of key components—and helps support U.S. security measures.

“Working with U.S. Customs and Border Protection, Boeing suppliers and logistics partners, and industry organizations such as the Aerospace Industry Association, we're finding ways to reduce supply chain risk while also discovering ways to make our system more efficient,” he said.

Improving the security of the supply chain poses particular challenges. Boeing manufacturing and business processes at Boeing suppliers and customers worldwide depend on the efficient, economical flow of products and materials—and are increasingly intolerant of any disruption.

U.S. Customs and Border Protection recently validated Boeing's supply chain security practices, both within the company and with global suppliers. Boeing was granted Tier-3 importer status, the highest level of validation for the Customs-Trade Partnership Against Terrorism (C-TPAT) program. Tier 3 validation affirms that Boeing, its international suppliers and logistics partners meet U.S. Customs and Border Protection criteria and standards to ensure the security of shipments and cargo.

The Tier-3 status makes a big difference to the major Boeing business units that participated in the validation process. Advanced manufacturing processes at Commercial Airplanes, for example, depend on

punctual delivery of parts from around the world. Thus, clearing customs smoothly and predictably is essential, and Boeing's C-TPAT validation makes that possible.

“Tier-3 importer status allows Boeing to qualify for the lowest number of customs and security inspections at ports of entry,” said Kim Miller a member of Global Partners, Program Management Office Import Compliance, BCA, “because Boeing's supply chains are considered secure based on our C-TPAT program implementation.”

Partners and suppliers have been supportive in working with Boeing to address new practices. “Timely deliveries and confidence that shipments are secure from tampering, from the time they leave the supplier's facility until they reach the receiving area, is as important to our suppliers as it is to Boeing,” Miller said.

And Boeing is encouraging its eligible suppliers to seek C-TPAT validation. “Cooperation from our suppliers and logistics providers is essential to Boeing's efforts,” said Integrated Defense Systems procurement analyst Tash Nomiya. “Most are receptive since they, too, want no disruptions to our supply chains.”

Earning Tier-3 status is complex and can be a lengthy process. Boeing helps suppliers understand the criteria. The company can analyze a supplier's operation and suggest areas where security could be improved. “It's up to individual suppliers to identify which suggestions make sense for their businesses and to prioritize improvement activities,” Nomiya said.

Konigsmark notes that improving supply chain security is a continual effort. In a post-9/11 world, the goal is to integrate security into our processes from start to finish, he added: “When security is observed every step of the way, it doesn't cause delay. It will prevent delays.” ■

richard.j.wood@boeing.com

Boeing Security follows detailed procedures to protect the security of parts and materials in the Boeing supply chain. On the left, Scott Potter oversees a canine inspection of parts from an international supplier that arrived at the Boeing Commercial Airplanes plant in Everett, Wash.; on the right, Jeff Catalini removes the bolt seal securing the locked container holding the parts.





BOEING GRAPHICS

A busy haul-way

Boeing last month unveiled three Commercial Airplanes orders that reflect the company's leading position in the freighter market.

- Cargolux placed a follow-on order for three 747-8 Freighters, giving the Luxembourg-based cargo operator 13 747-8 Freighters on order, along with options for two airplanes and purchase rights for 10. Cargolux CEO Uli Ogiermann cited the airplane's "outstanding economics" and environmental performance as critical factors in the carrier's decision to make the 747-8 Freighter "the centerpiece of our future fleet."
- Moscow-based freight company Volga-Dnepr Group ordered five Boeing

747-8 Freighters with purchase rights for an additional five airplanes, Boeing and Volga-Dnepr Group said. Air Bridge Cargo, a subsidiary of Volga-Dnepr Group, will operate the airplanes (above). "The 15 percent improvement in fuel efficiency over the 747-400ER Freighter and the new technologies that Boeing has adapted from the 787 Dreamliner to the 747-8 made for an extremely compelling business case," said Alexey Isaikin, Volga-Dnepr Group president.

- Boeing and DHL last month agreed on an order for six 767-300ER (Extended Range) Freighters (above left). "Adding the wide-body 767 Freighter to our network allows us to grow our business considerably," said John Mullen, DHL Express CEO.

Something you should know

Library Services ready to help find information

External Internet search engines are valuable for many information searches you need for work. But sometimes scouring the Internet isn't the best use of your time. And you might not be able to get full-text access to technical or professional information because of proprietary licenses and fees.

The Boeing library, at <http://librarylearning.web.boeing.com> on the

Boeing intranet, removes the barriers to retrieving authoritative information. It maintains access to relevant information resources through Boeing-paid subscriptions in nearly all the technical and professional arenas Boeing serves.

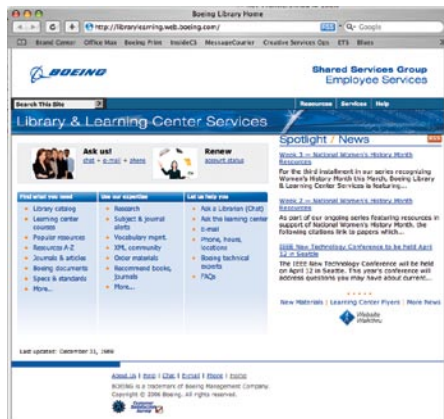
Among the materials available: select internal Boeing documents; industry, military or government specifications and standards; parts catalogs; e-books and electronic journals; and information related to a specific piece of technical data. And the Boeing library's teammates are ready to assist with research.

To get started, try any of these links from <http://librarylearning.web.boeing.com>.

- Popular resources: Dig into some of the library's most-requested electronic resources.
- Library catalog: Search Boeing's print collection and electronic resources.
- Boeing subscription list: The Boeing library maintains more than 70 subscription-based resources. To access the full list

from the home page, click the A-Z Resources link, and then look for the subscription resources link on the right side of the page.

Still can't find what you need? The Boeing library's professional technical staff can give you research and reference assistance. ■



Looking for information you need for work? Try the Boeing library, at <http://librarylearning.web.boeing.com> on the Boeing intranet, which offers relevant information resources.

The most-wanted list

Here are Library Services' five most-requested books for January. As shown by this list, Boeing employees are strongly interested in lean operations and management information.

1. "24-Carrot Manager" by Adrian Gostick and Chester Elton
2. "Know-How: The 8 skills That Separate People Who Perform From Those Who Don't" by Ram Charan
3. "The Lean Office Pocket Guide: Tools for the Elimination of Waste in Administrative Areas!"
4. "The Leader in You: How to Win Friends, Influence People, and Succeed in a Changing World" by Dale Carnegie
5. "Reinventing Lean: Introducing Lean Management Into the Supply Chain" by Gerhart Plenert

F-15 EAGLE

A U.S. Air Force F-15 Eagle takes off from Elmendorf Air Force Base, Alaska, for an alert-response mission during a homeland defense/homeland security exercise.



U.S. AIR FORCE PHOTO BY AIRMAN 1ST CLASS ANTHONY NELSON JR.

Power, worldwide

Global Strike Systems team delivers frontline fighters, weapons, ordnance

By KATHY COOK

In the Gulf of Oman, a U.S. Navy lieutenant leaves the briefing room and heads out to the carrier deck, flight helmet in hand, ready to start the day's sortie. Today, she will climb into her Super Hornet for a reconnaissance flight and cruise at 20,000 feet, watching for potential threats in the area. While others might view her job as thrilling and dangerous, for her it's a routine flight—one she's carried out hundreds of times over land and water.

Thousands of miles away, a Republic of Korea Air Force pilot readies his F-15K fighter plane for a similar mission to help keep the skies above his country safe. While he and the U.S. Navy pilot are separated by geography and language, they

have one thing in common: They get to fly one of the world's most advanced fighter aircraft.

These vignettes illustrate what Boeing's Global Strike Systems organization is about. It designs and manufactures fighters, bombers, weapons and unmanned systems that deliver persistent, precision assault against targets on land, in the air and at sea around the world. The customers of these products and systems might be U.S.-allied defense departments around the globe. But ultimately, GSS products are there to support freedom worldwide.

That global nature means that at any time, GSS products are being used around the world. It also means that GSS products make up a significant portion of the products and services Integrated Defense Systems provides to its customers—which in turn affects Boeing's bottom line and the company's value to stakeholders.

In 2006, GSS revenues represented more than 20 percent of the overall IDS revenues of \$32.4 billion. By the latest figures available, if GSS was a separate company, it would rank 322nd in the Fortune 1000 rankings, ahead of companies such as Monsanto or

EA-18G GROWLER

The first EA-18G Growler takes to the sky with jamming pods. This electronic attack aircraft will enable warfighters to perform various airborne electronic attack missions.



KEVIN ELYNN PHOTO

A powerful portfolio

Here's a glance at the products and systems Global Strike Systems currently provides to U.S. Armed Forces and international customers:

Aircraft and aircraft support

- **F-15E Strike Eagle.** This tactical fighter aircraft can perform air-to-ground and air-to-air missions and fighting at low altitude during day or night and in inclement weather. Boeing has produced more than 1,500 F-15s in the last 30 years. Customers include the U.S. Air Force and Japan, Saudi Arabia, Israel, Korea and Singapore.
- **F/A-18E/F Super Hornet Block II.** The most advanced multirole fighter aircraft available today for the U.S. Navy. The aircraft is able to perform virtually any tactical mission, including air superiority, day/night strike with precision-guided weapons, fighter escort, close air support, suppression of enemy air defense, maritime strike, reconnaissance, forward air control and tanker.
- **F-22 Raptor.** With its combination of stealth, supercruise, agility and integrated avionics, the U.S. Air Force's F-22 fighter represents an exponential leap in warfighting capabilities. The Raptor performs both air-to-air and air-to-ground missions and is designed to project air dominance rapidly and at great distances. Boeing supplies the F-22's wings and aft fuselage, integrates the advanced avionics, and leads the pilot- and maintenance-training programs.
- **T-45 Training System.** The first totally integrated training system developed for and used by the U.S. Navy. It includes the Boeing-built T-45 Goshawk aircraft, advanced flight simulators, computer-assisted instructional programs, a computerized training integration system, and a contractor logistics support package.
- **Joint Helmet-Mounted Cueing System.** A multirole system that enhances pilot situational awareness and provides head-out control of aircraft targeting systems and sensors.

Weapons

- **Harpoon Block II.** The world's most successful anti-ship missile provides accurate long-range attack of land and ship targets.
- **Joint Direct Attack Munition.** A guidance kit that converts existing unguided free-fall bombs into accurately guided "smart" weapons. The U.S. Department of Defense plans to procure about 226,000 JDAM kits.
- **Standoff Land Attack Missile-Expanded Response.** A highly adaptable day/night, all-weather, over-the-horizon precision-strike missile capable of hitting stationary or moving targets on land or at sea. It's recognized by the U.S. Navy as the most accurate weapon in its inventory.
- **Small Diameter Bomb.** A precision-strike weapon system that's loaded in internal bays or on external stations of manned or unmanned platforms. With the SDB, platforms can carry four individually targeted, low-collateral-damage weapons in a space that previously could accommodate only a single weapon.
- **Conventional Air-Launched Cruise Missile.** An affordable, long-range (standoff) missile that's been proven in combat by the U.S. Air Force. It's produced by converting surplus nuclear-armed AGM-86B missiles into the AGM-86C/D missile, which is the basis for CALCMs. This nonnuclear missile is powered by a turbofan jet engine that propels it at subsonic speeds. Once launched, the CALCM deploys its folded wings, tail surfaces and engine inlets to fly complicated, low-altitude routes.
- **Brimstone.** An autonomous air-to-surface guided missile that independently finds, tracks and attacks targets day or night in any weather. The Brimstone—made by Boeing and the British company MBDA—provides quick response and low collateral damage.

BOEING ILLUSTRATION



SMALL DIAMETER BOMB

A computer-aided-design rendering of the Small Diameter Bomb Increment I. The SDB lets platforms carry four individually targeted, low-collateral-damage weapons in a space that could formerly hold only one weapon.

Starbucks. Several GSS programs have been hailed as "best practices" by both industry and customers, and the continued performance of these programs has earned Boeing outstanding award fee payments from the U.S. government in a time when the government is carefully scrutinizing such payments.

In short, GSS provides value across the board: to the warfighter, to the taxpayer and to Boeing stakeholders.

"Global Strike Systems answers an emerging requirement of the U.S. Defense Department, and increasingly of international customers," said Chris Chadwick, GSS vice president and general manager. "These products allow warfighters to efficiently and potently carry out missions to safeguard their nation's people and freedom."

Chadwick takes great pride in the success of GSS products and systems—for the crucial role they play in combat, for the part they play in IDS and Boeing success, and for how they reflect the values and workmanship of his team. That team includes 6,400 employees at nine sites around the United States, including St. Louis, St. Charles, Mo., Patuxent River, Md., and the Puget Sound region of Washington state.

"I really think people are the company's most valuable asset," said Chadwick. "Every employee brings something unique to the table. Ninety-nine times out of 100, employees have the right answers if they're given the help they need to clear barriers, provided freedom to voice their ideas and take risks, and given opportunities to succeed."

Chadwick believes those opportunities need to extend to every area and level of the GSS organization from engineering and program management to the office and factory floor. "We've made it a point to create opportunities for employees with diverse backgrounds to excel in project management, systems engineering and production operations, to name just a few," Chadwick said.

Judging by a host of GSS successes, employees have taken full advantage of the opportunities.

In 2006, GSS delivered 42 F/A-18E/F Super Hornet Block 2 aircraft to the U.S. Navy, 14 F-15K Slam Eagles to Korea, 13 T-45C



An eye on the future

Here's a look at some Global Strike Systems products in development.

- EA-18G Growler. The U.S. Navy's newest electronic attack aircraft will enable warfighters to perform an array of airborne electronic attack missions (including jamming or suppressing enemy radar and communications). It operates from either the deck of an aircraft carrier or from land-based fields.
- X-45N. This autonomous combat air vehicle for the U.S. Navy flies long-endurance, high-risk operational missions and delivers precision weapons on target. The X-45N is highly adaptable to changing battle conditions and provides intelligence, surveillance and reconnaissance gathering.
- Laser JDAM. A laser sensor kit is installed in the field to the front of existing JDAM weapons, improving JDAM's current near-precision accuracy to precision accuracy against fixed and moving targets.
- Small Diameter Bomb II. Variant of SDB that will also provide a robust capability against moving targets in all weather from stand-off ranges.
- Brimstone 2 (Laser Brimstone). Incorporates the highly successful Semi Active Laser seeker onto the existing Brimstone missile system.
- Harpoon Block III. This version of the world's most successful anti-ship missile (Harpoon Block II) features a robust data-link system. This system permits more control after the weapon is released through in-flight target updates and positive terminal control. Also, it has connectivity with future network architecture.

Goshawks, 24 F-22 wing sets, 26 F-22 aft fuselages and more than 31,000 weapons to customers. Additionally, GSS recently rolled out the first EA-18G Growler, the Navy's newest airborne electronic attack aircraft. And the F-22 program delivered its 100th wing set. In addition, several GSS programs performed several key tests and demonstrations to illustrate the capabilities of GSS products.

During the EA-18G rollout ceremony, Chief of Naval Operations Adm. Michael Mullen summed up the customer's feeling about the

MK-84 JDAM

U.S. Air Force Test pilot Lt. Col. Troy Fontaine and Maj. Kevin Stefenson, a weapons system officer, drop five MK-84 Joint Direct Attack Munitions from their F-15 Eagle over the U.S. Navy's China Lake test range near Edwards Air Force Base, Calif.



U.S. AIR FORCE PHOTO



U.S. AIR FORCE PHOTO

F-22 RAPTOR

A U.S. Air Force F-22 Raptor flies over the Sierra Madre mountains in California. Boeing supplies the fighter's wings and aft fuselage, integrates the advanced avionics, and leads the pilot- and maintenance-training programs.

team, referring to them as among the world's best artisans and experts in their craft. "There's no job these people can't do; they rise to every challenge we can throw at them," he said.

SUPPORTING LEAN+

On a smaller scale than major program wins, but equally important to the success of the organization, GSS employees in St. Louis have developed solutions to streamline and improve factory processes. These improvements have created significant time and cost reductions—and help support the Lean+ companywide growth and productivity initiative.

Among these improvements:

- The F/A-18E/F team redesigned an assembly area—a project that took nearly two years to complete—and converted the factory from a static assembly setup into a pulse line. By incorporating Lean strategies, the team reduced cycle time by 55 percent and unit costs by 80 percent. The team's lean efforts also cut the pro-

duction footprint 20 percent by reallocating floor space. This let the team move final assembly operations for both the F-15 and the T-45 into the same building that housed F/A-18E/F production.

- A team of employees, organized as a High Performance Work Organization (HPWO), recently secured its second patent for a process using fluorescent dye to prevent foreign objects from being left in an aircraft during production. (An HPWO is a group of co-workers who are responsible for a common function or product, share common goals and exercise self-determination in continuously improving the quality of their output and the efficiency of their processes.)

- Another team (also an HPWO) designed and built a time-saving tool for workers to access engines during ramp operations without removing the entire engine bay door multiple times.

- One of the latest innovations for GSS involves integrating the work instructions needed for F/A-18E/F flight ramp checkout. A team of HPWO and Support Systems personnel integrated the instructions into a memory card inserted in an existing memory-card slot in the aircraft's cockpit. This enables the ramp personnel to see the instructions on the cockpit displays, replacing the paper instructions they used previously. This lean effort has resulted in enhanced repeatability and assembly performance, and the team is already working on expanding the capabilities of the product.

Continued on Page 18

Who's on the team

Global Strike Systems' success is the product of its 6,400 teammates at various Boeing locations. Here's a look at a few of these teammates.



Arlene Moore

Sheet metal assembler, riveter, F/A-18

Work philosophy:

Do the best I can. Work toward on-time, first-time quality, and staying under cost. This is something we have to work at together. If someone is out or a little behind, you don't leave them hanging; you move in and help get the job done. We're all reaching for the same mark: to provide our customers with a product we're proud of.



Alex Niere

Business analyst

Small Diameter Bomb and Joint Direct Attack Munition programs

Most memorable work experience:

During my first month at Boeing, we had a few picnics and an annual Fall Sports Challenge. It made me think every week was going to be a picnic!

Best work-related advice:

A long time ago my father, who also works at Boeing, gave me just four words of advice: "Listen to your boss!" It worked then, and it stands true now.



Brian Walls

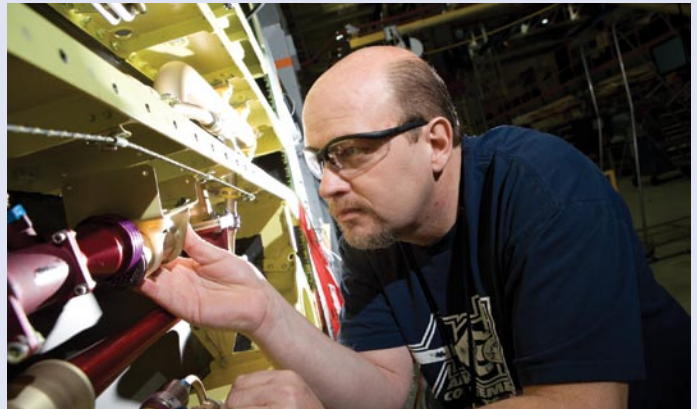
Sheet metal assembler riveter, collateral inspector, F/A-18

My daily philosophy:

Have an open mind, and be patient with people and with the way things work. If you're not patient, you tend to overreact. And that doesn't help anyone.

What everyone should know about my job:

It's not the easiest job in the world. It takes time to perfect your expertise, and you have to work to retain knowledge in certain specifications. When people come by, they may think what we do is easy, but there's a lot to it.



Ron Smith

Mechanic, aircraft production, F/A-18

F/A-18 inner wing skinning

Best work-related advice:

I got a piece of advice from one of the first foremen I worked for, and that was to make yourself wanted or needed. Do that, and you'll always have a job!

Additional profiles on Pages 18 and 19

A U.S. Navy T-45A Goshawk trainer aircraft, assigned to Training Air Wing Two, prepares to land aboard the Nimitz-class aircraft carrier USS Harry S. Truman.

U.S. NAVY PHOTO BY PHOTOGRAPHERS MATE 3RD CLASS RYAN O'CONNOR



T-45 GOSHAWK

Continued from Page 16

Although the GSS team has a lot on its production plate, the organization's leadership is keenly aware of the need to look beyond today's successes and plan strategically.

"We have to continually adjust and adapt to evolving military requirements and market conditions," Chadwick said. "We have to implement strategies now to ensure that in decades to come Boeing is still delivering frontline fighters, weapons and trainers."

Toward that end, GSS is fully engaged in developing an array of new products such as electronic attack aircraft, autonomous combat

air vehicles, and fighter aircraft with stealth and cruise abilities that will supersede today's most potent fighters (see box on Page 15).

"This team is incredibly energizing," Chadwick said. "Whether it's the stringent focus on execution by program managers, the creativity of engineering, the ingenuity of men and women in the factory, or the practical expertise of office workers, the entire team has made GSS successful. It's their energy and creativity that makes my job enjoyable." ■

kathleen.m.cook@boeing.com

Who's on the team

Continued from Page 17

Lauribel Lowe

Office administrator

F/A-18 international business development

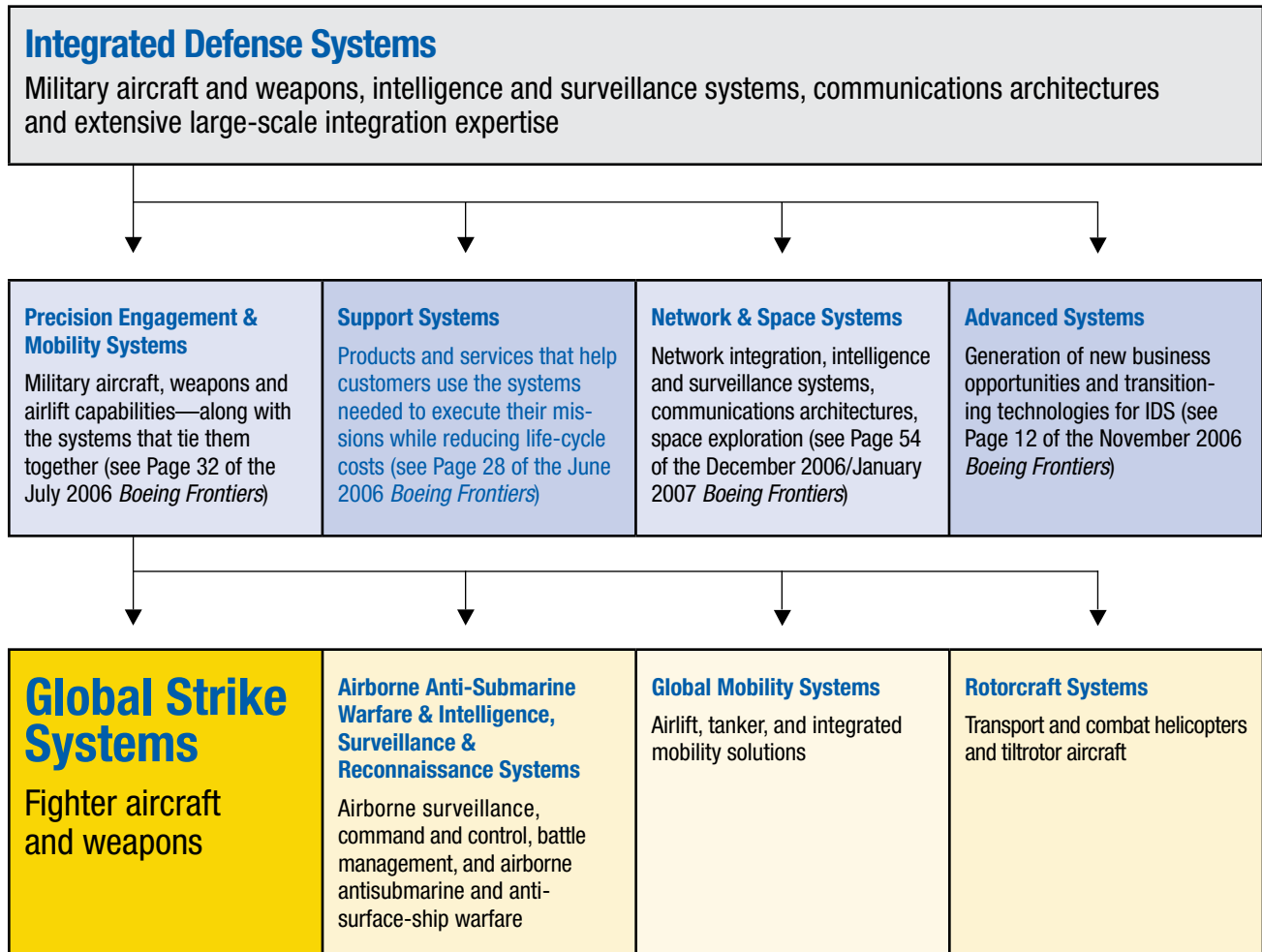
How do you view your job?

As an office administrator, I see myself as a type of an ambassador in the sense that I represent others. I'm usually the first person people come in contact with before they see my boss. Their initial contact with this team is me—either in person, on the phone or through e-mail. So it's important that I be customer-focused and have a positive attitude.



Where GSS fits in IDS

Global Strike Systems is one of four divisions of the Integrated Defense Systems business known as Precision Engagement & Mobility Systems. PE&MS was formed in the January 2006 reorganization of IDS. Here's a quick schematic look at this part of IDS.



Chris Chadwick

Vice president and general manager, Global Strike Systems

Most inspiring leader:

[Former General Electric chairman and CEO] Jack Welch said, "See reality as it is, not as you want it to be." Those words have always resonated with me. It drives everything I do, whether it's a leadership challenge, a people issue, a strategic opportunity or an execution risk.

Favorite novel:

"Einstein's Dreams" by Alan Lightman. It offers unique perspectives on a situation and stretches your imagination.

Look North, look ahead

Boeing-Canada partnership evolves to next step: Supporting military aviation needs

By DIANNA RAMIREZ AND FELIX SANCHEZ

When the first of four Canadian-bound C-17 Globemaster IIIs rolls off the production floor later this summer, it won't be the first time Boeing has made a historically significant delivery for Canada.

Nearly a century ago, company founder William Boeing flew with pilot Eddie Hubbard through a harrowing snowstorm in a Boeing Model C-700 seaplane from

Seattle to Vancouver, British Columbia. The flight marked the first international airmail delivery.

Since then, the relationship between Boeing and Canada has grown into a strong and flourishing partnership in many areas, including the defense side. A significant step in this partnership centers around Canada taking a stronger role in global defense, as illustrated by its purchase of C-17s. That means Canada is becoming an increasingly important customer to Integrated Defense Systems. The nation is looking to add not only military airlifters but also helicopters: CH-47 Chinook helicopters represent one of the key IDS campaigns in Canada this year. Canada is also seeking services to support its aircraft.

"Boeing employees might not realize it, but Canada's defense needs are growing," said Al DeQuetteville, vice president for



BOEING GRAPHIC

CH-47 Chinook helicopters are one of the key Integrated Defense Systems campaigns in Canada this year. IDS executives are working closely with the Canadian Department of Defence to help meet the Canadian Forces' mandatory capabilities for medium-to-heavy helicopters.

The Boeing Company in Canada. "We at Boeing are poised and ready to serve this important market and continue strengthening our long partnership with Canada."

"We're proud that Canada is the latest to join the roster of international partners who have chosen C-17s for their military and humanitarian efforts," said Dave Bowman, vice president and C-17 program manager.

Aerospace industry observers have recognized the importance of Canada acquiring C-17s. "This is a pretty important step forward," said Paul Cabot, curator of the Toronto Aerospace Museum. "In the past, Canada leased [airlifters] in order to support domestic and international missions. Now Canada will have the ability to do these things on its own when needed and not by anybody else's timetable."

Along with airlifters, Boeing is looking to serve Canada's rotorcraft needs.

Boeing has undertaken an active campaign to make Chinook CH-47 helicopters available to Canada. In August 2006, the



BOEING GRAPHIC

This artist's conception depicts a Canadian C-17 airlifter flying over Ottawa, Canada's capital city. The Canadian government has reached contract agreement to purchase four C-17 Globemaster IIIs from Boeing.

C-17 test pilot Joel Brown says he's looking forward to the first flight of Canada One, Canada's first C-17. His family has Canadian origins, and his grandfather flew B-24s and B-17s with the Royal Canadian Air Force.

Canadian Department of National Defence announced its intention to acquire a minimum of 16 CH-47 Chinooks.

The Canadian Chinooks will be based at two main operating locations in Canada, ensuring that the aircraft are available for overseas deployments. Chinook deliveries will take place within 36 months of contract award, with all deliveries completed within 60 months. Currently, Boeing and the Canadian Department of National Defence are working together to structure the acquisition.

"Boeing Rotorcraft has a long-standing relationship with Canada, and the CH-47F will add another successful chapter to that relationship. We look forward to working together and meeting their needs today and well into the future," said Jack Dougherty, Boeing's H-47 Program manager.

Yet Canada is interested in not just equipment, but also service. Both the Chinook Request for Proposal and the C-17 contract award call for 20 years of service support with a strong in-country team. "This is a key opportunity for Canada to expand in-service support for a new fleet of Chinook aircraft," said Peter Boag, president and CEO of the Aerospace Industries Association of Canada.

In addition, IDS also has a major role in the ongoing transformation of the Canadian Forces by modernizing 80 of Canada's CF-18 fighter jets with a two-phase avionics upgrade program that began in 2001.

For some Boeing employees, the chance to serve Canada's defense needs represents more than supporting a customer.

Joel Brown, 39, test pilot at Boeing's Long Beach, Calif., C-17 manufacturing facility, has taken the controls for the first flight of many new C-17s. However, the veteran pilot said that when he climbs into the pilot seat of Canada One, Canada's first C-17, it will be a little more special: His mother's side of the family is from the Canadian province of Alberta, and his grandfather is a retired aviator who flew B-24s and B-17s with the Royal Canadian Air Force.

"Absolutely, I'm looking forward to it," Brown said of the initial flight. ■

dianna.i.ramirez@boeing.com
felix.sanchez@boeing.com



GINA VANATTER PHOTO

By the numbers:

The Canadian Forces are scheduled later this year to take delivery of the first of four C-17 Globemaster IIIs. This marks the latest event in a long relationship Boeing has had with Canada. Here's a look at just a few of the numbers that reflect this relationship.

60 Number of letters in the first international airmail delivery, made by company founder William Boeing and pilot Eddie Hubbard. The pair flew through the snow in a Boeing Model C-700 seaplane from Seattle to Vancouver, British Columbia, on March 3, 1919.

16 Minimum number of CH-47 Chinooks the Canadian Department of National Defence said it intended to buy, in August 2006.

20 Number of years of service support with a strong in-country team called for by both the C-17 contract award and the Chinook request for proposal.

80 Number of CF-18 fighter jets Boeing is modernizing, through a two-phase avionics upgrade program that began in 2001.

Why space matters

Boeing is in a coalition that's promoting public support for exploration

By Ed Memi

Many people have a basic understanding of the U.S. space exploration program. But they often fall short in understanding how space affects their lives.

Boeing and a number of companies in the human spaceflight business saw a need to promote the United States' Vision for Space Exploration, announced in 2004. To do this, they formed the Coalition for Space Exploration to better educate the public and Congress about its relevance.

The Vision for Space Exploration is an ambitious program of discovery using human and robotic systems to complete the International Space Station and return to the moon and someday head to Mars and other distant planets.

The vision recognizes that a vibrant space program will increase human knowledge of the universe, advance science and engineering, and stimulate the U.S. education system. In addition, the vision realizes that space achievements establish technological innovation and space leadership, generate technologies for Earth, inspire students to learn, and strengthen the U.S. economy and overall security.

The coalition comprises two complementary groups. The public affairs team directs and develops public outreach activities, such as advertising, editorial support, research, reports and public appearances. The government affairs team—made up of 55 companies, asso-

ciations and aerospace unions—actively tracks the progress of space-exploration policy, and assists with messages and audiences for the public outreach effort. The team has been active in briefing members of Congress about the vision.

“Congress has endorsed the Vision for Space Exploration as the law of the land. But the competition for budget resources is fierce, and there are no guarantees America’s space exploration program will stay on track over the long haul,” said Joe Mayer, chairman of the coalition’s public affairs team and business development manager for Boeing Space Exploration in Houston.

Coordinating these efforts is made easier by the fact that both teams are led by Boeing managers. Brian Wagner of Boeing’s Washington, D.C., Operations is co-chair of the Coalition’s government affairs team and joins Mayer in support of the vision.

A recent initiative of the coalition has been to sponsor NASA Means Business. This program lets college students in marketing, advertising and media produce a communications plan that will inform and inspire the public to support the U.S. space program. The coalition also has placed a number of advertisements and conducted several polls to gauge public support. The polls show strong support of the vision.

For more information about the coalition, visit www.spacecoalition.com. ■

edmund.g.memi@boeing.com



Be a Space Advocate!

Gallup polls consistently show strong public support for the U.S. space program, including plans to return humans to the moon and venture on to Mars. Unfortunately, few ever voice their support to their elected representatives in Congress.

The Web site www.spaceadvocate.com provides a way for Americans to let their elected officials know how much they support U.S. space exploration plans.

“Spaceadvocate.com makes it easy for the common citizen to identify their congressman and senators and provides a ready way to send an e-mail to those elected officials expressing support for space exploration,” said Joe Mayer. He’s chairman of the Coalition for Space Exploration public affairs team and business development manager for Boeing Space Exploration in Houston.

A student from Rice University signs up for spaceadvocate.com while Coalition for Space Exploration members Jackie Hutto (middle) and Deanna Wilke look on during the Space Exploration conference in Houston last December. Boeing is a member of the Coalition for Space Exploration, which helps promote the Vision for Space Exploration.

PHOTO COURTESY OF THE COALITION FOR SPACE EXPLORATION



A Boeing KC-767 Tanker for the Italian Air Force last month connected the aircraft's refueling boom to the F-15E1 Advanced Technology Demonstrator, the first Strike Eagle built, and transferred about 5,500 pounds of fuel. This marked the KC-767 Tanker program's second successful fuel transfer flight; the first was completed the previous day.

U.S. AIR FORCE PHOTO BY JET FABARA



It's officially a tanker!

KC-767 reaches key milestone as aircraft successfully transfers fuel while in flight

By DOUG WEBB

After the KC-767 Tanker's historic back-to-back aerial refueling missions in early March, one Wichita, Kan.-based Boeing employee summed it up best when he said, "The KC-767 has officially become a tanker."

During the first successful fuel transfer with a B-52 on March 5, the tanker's crew demonstrated its refueling boom's stability by making 73 contacts with the receiver aircraft. In that four-hour flight, the tanker offloaded nearly 10,000 pounds of fuel.

The next day, in a mission over Missouri, the KC-767 Tanker rendezvoused with the F-15E1 Advanced Technology Demonstrator. The tanker again made multiple contacts with the receiver and transferred about 5,500 pounds of fuel.

"These are clearly landmark milestones," said Joe Shaheen, director, Boeing International Tanker programs. "This is the culmination of a lot of hard work and

dedication by the entire tanker team."

From the KC-767 Tanker flight crew's point of view, these aerial refueling missions further validated the aircraft's systems.

"The boom performed extremely well," said Rickey Kahler, KC-767 Tanker chief test boom operator on these missions. "The fly-by-wire system has optimized the flight controls, making it both precise and absolutely first-rate."

Steve Stowe, chief pilot for the Boeing KC-767 Tanker, also had high praise for the tanker's performance.

"These tests proved that the Boeing tanker tradition lives on in the KC-767," Stowe said. "It's going to be a great tanker platform, and it handled very well throughout the aerial refueling tests. The receiver pilots told me after the testing that the KC-767 was a 'solid' platform. I think our whole team is proud to be a part of the first day in the lifetime of another great Boeing tanker."

Just two weeks prior to its first successful aerial refueling mission, Boeing offered the advanced KC-767 Tanker for the U.S. Air Force's KC-X competition. Boeing seeks to replace the U.S. Air Force's 45-year-old medium-size KC-135 Stratotanker with the more capable advanced KC-767.

"By refueling a B-52 and an F-15E in the same week, our KC-767 team demonstrated the phenomenal performance of this fifth-generation boom while dramati-

cally reducing risk for future tanker customers like the U.S. Air Force," said Ron Marcotte, vice president and general manager of Boeing Global Mobility Systems.

Many tanker employees have watched the program mature from design to modification and into flight test.

"I've been with the program for six years and have seen it progress through design, modification and flight test. It was very exciting to see everyone's hard work pay off with a successful aerial-refueling mission," said Pat Novak, a KC-767 Tanker structural design engineer in Wichita. "I've always been awed by the design genius of the KC-135 and KC-10. Of course, it's our goal to not only match their excellence but exceed that standard. I think we have done that."

"This is the ultimate test that demonstrates to the world we have the next-generation tanker flying and ready," said Lavonne Bartel, a KC-767 Tanker staff analyst in Wichita.

"Everyone here in St. Louis who works on the tanker program was very excited about the first successful aerial refueling mission: It's now proven technology," said Ken Johnson Jr., a KC-767 Tanker financial controls analyst in St. Louis. "Each milestone of this type further proves our technology and systems and will reduce risk for our customers." ■

douglas.m.webb@boeing.com

When he reaches the rite of passage for student naval aviators—the carrier qualification—Sublieutenant Yashu Aggarwal of the Indian Navy will take guidance from the landing signal officer, who will clear him to land if he's on the proper trajectory—or wave him off for another approach.



Flying the meatball

Training with U.S. Navy in Boeing-built T-45 Goshawk proves to be a rich experience for an Indian student carrier pilot

RON BOOKOUT PHOTO

By DOUG CANTWELL

What's the greatest challenge you face in learning to land a very fast fighter aircraft on a very small aircraft carrier? "Flying the meatball, of course," said Sublieutenant Yashu Aggarwal of the Indian Navy, with a smile and without hesitation.

He explained the carrier deck's system of Fresnel lights that helps keep the pilot descending at the correct trajectory. If you're off the mark, you won't see the yellow light known affectionately to carrier pilots as the "meatball." Unless you can correct matters in time, the landing signal officer will wave you off, directing you to make another pass.

A 22-year-old officer selected for the Indian Navy's elite strike-pilot program,

Aggarwal has trained in the Boeing-built T-45 Goshawk with the U.S. Navy's Naval Air Training Command at Naval Air Station Kingsville near Corpus Christi, Texas. He's also logged hours in high-fidelity simulators and computer-assisted classrooms supplied by Boeing's St. Louis-based T-45 team, which supports Kingsville and NAS Meridian, Miss., with a fully integrated curriculum.

Over the next four years, 32 Indian pilots will receive training through the U.S. Navy pipeline, with four students cycling in and out of the program every six months. At a mid-February "winging" or course-graduation ceremony, Commodore Parasuram Murugesan, Naval Attaché to the Indian Ambassador in Washington, D.C., said of Aggarwal and his colleagues: "With the strike-pilot program, we are

building a foundation for long-lasting cooperation between our two navies, and these young men will contribute immensely to the standard of naval aviation in our country for years to come."

A FAST 2 SECONDS

Upon graduation from a naval preparatory high school in New Delhi at 17, Aggarwal entered India's National Defence Academy, where he completed an intensive three-year program that earned him the equivalent of a four-year degree at one of the U.S. academies.

Once accepted into flight school, Aggarwal spent six months training in an HPT 32, a single-cylinder, propeller-driven trainer rated for aerobatics. "We did more stunt-type flying and pulled more G's in the HPT than we do now," he recalls. "But with

the T-45, you have less time to make decisions. Everything that took 10 seconds in the HPT now happens in two seconds.”

Since arriving in the United States, Aggarwal has followed the same trajectory as his fellow students serving in the U.S. Navy. He’s had to tough it out for six weeks of aviation preflight indoctrination at NAS Pensacola, Fla. There he found himself totally immersed for four weeks both in classroom learning and (quite literally) in water. While cramming for exams, he also endured hours of swim instruction and practice. Then came the “easy” part: two weeks of flight physiology and survival training.

From there, he moved to nearby NAS Whiting Field, Fla., for 18 weeks of flying propeller-driven T-34s. Upon arriving at NAS Kingsville for his first jet-propelled training in the T-45, he found himself grounded again for three months of classroom and simulator preparation.

Yet the advanced visual simulator, part of the fully integrated T-45 training system, was almost indistinguishable from the real thing. Even better, it gave him his first taste of all-digital instrumentation in the flat-panel “glass cockpit” introduced in the “C” variant of the T-45. “The glass cockpit frees up a lot more of your attention to concentrate on tactics,” Aggarwal observed, “because there’s no longer a need for you to process info in your head.”

Once cleared to climb into a real cockpit, Aggarwal found himself flying under a “blanket,” or instrument hood, for the first couple of weeks. “You have to learn to rely on the instruments,” he said, “so they start off by taking away your ability to look out the window.”

What does he enjoy most about flying the T-45C? “The velocity-vectoring function on the head-up display,” he said. “When you’re up there with few or no points of visual orientation, especially when flying in strong winds, velocity-vectoring helps you distinguish your real trajectory from the one your senses are perceiving.”

Aggarwal now faces Phase 2 of his training, which focuses on tactical combat formation, air combat maneuvering and air-to-ground weapons delivery. It will culminate with the young naval aviator’s true rite of passage: qualification aboard a U.S. Navy aircraft carrier. If he consistently demonstrates safety, shows an improving trend and scores high enough on his landings, he’ll make the grade. ■

doug.cantwell@boeing.com

NATRACOM: One of the Navy’s busiest neighborhoods

A first visit to Naval Air Station Kingsville, located some 40 miles southwest of Corpus Christi, Texas, leaves you wondering: How could such a remote place be hopping with so much activity around the clock?

Boeing T-45 Goshawks, the only aircraft in the world designed specifically to conduct carrier-based flight training, roar by overhead in two- and four-ship formations almost continuously. It’s not surprising to learn that Kingsville’s two T-45 squadrons, the Redhawks of VT-21 and the Golden Eagles of VT-22, together with sister squadrons VT-7 and VT-9 at NAS Meridian in Mississippi, logged more than 5,100 flight-hours in January.

In the 15 years since it began service with the Naval Air Training Command (NATRACOM), the T-45 has racked up 740,000 hours and seen more than 3,000 U.S. Navy and Marine Corps pilots receive their wings of gold. Hundreds of their brothers and sisters in arms—from France, Italy, Spain, Kuwait, Thailand, Brazil and India, among others—have passed through the pipeline with them.

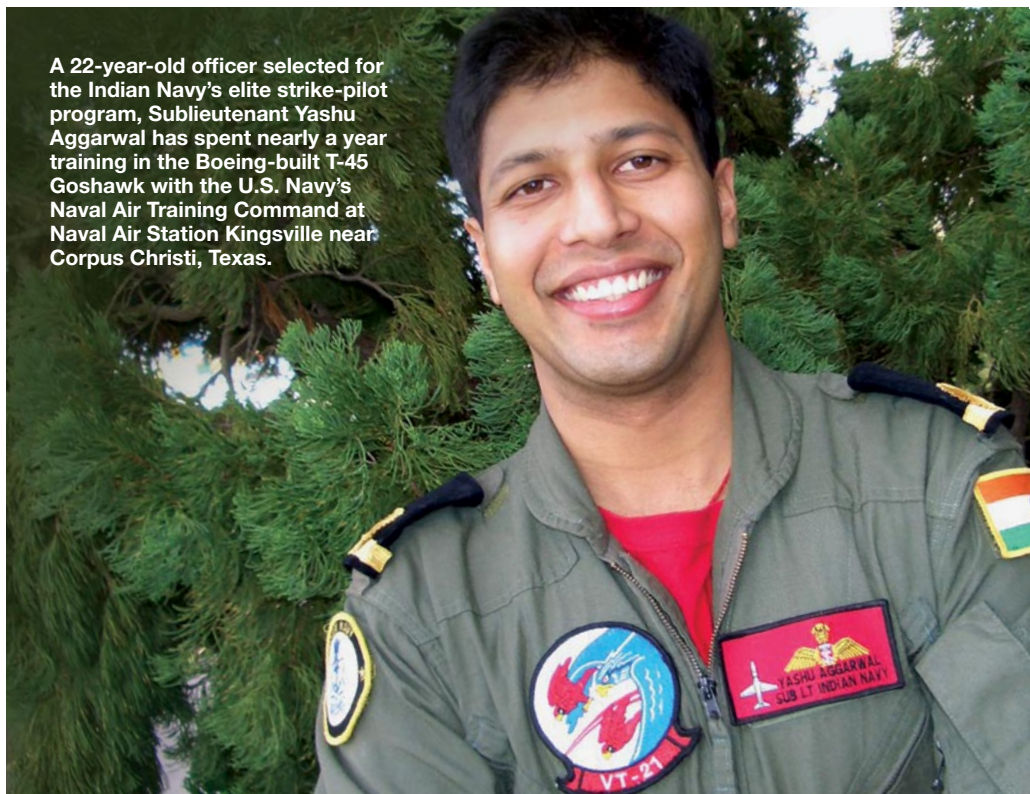
The Boeing team supplies Kingsville and Meridian with more than just aircraft. The integrated training system includes operational and instrument simulators, computer-assisted classrooms and fleet support—even an automated approach to flight scheduling and student record-keeping.

Full-up integration of these assets allows the Navy to reduce flight time and overall length of training. Students at Kingsville and Meridian acquire basic aviation skills in electronic classrooms with state-of-the-art projection systems. They learn difficult 3-D maneuvering concepts using sophisticated computer animations. They practice flying in high-fidelity visual simulators that train them on instrument and formation flight, weapons delivery and carrier approaches, all in a variety of weather and day/night scenarios.

The NATRACOM squadrons maintain what’s probably the Navy’s busiest schedule—and arguably its most critical mission. But with support from Boeing’s T-45 team, they continue to find new ways to enrich the curriculum and make precious funds work a little harder.

—Doug Cantwell

DICK NELSON PHOTO



A 22-year-old officer selected for the Indian Navy’s elite strike-pilot program, Sublieutenant Yashu Aggarwal has spent nearly a year training in the Boeing-built T-45 Goshawk with the U.S. Navy’s Naval Air Training Command at Naval Air Station Kingsville near Corpus Christi, Texas.

www.globaltanker.com



This Integrated Defense Systems ad introduces the KC-767 Advanced Tanker as the best aerial refueling solution for the U.S. Air Force. The ad positions the KC-767 Advanced as the world's most capable, most efficient and most deployable tanker—and the low-risk choice for the Air Force. This ad is part of a series of ads that will appear over the coming months in major trade, congressional and base publications.



MADE FOR THE MISSION.

**THE KC-767 ADVANCED TANKER. THE WORLD'S MOST CAPABLE,
MOST EFFICIENT, MOST DEPLOYABLE TANKER.**

The mission is aerial refueling. Our warfighters require the one tanker that delivers the most fuel in real combat environments: the KC-767 Advanced.

With its optimum size and superior capability, the KC-767 Advanced does what no other tanker can. It raises the standard and lowers the risk for those who buy it, those who fly it and those who depend upon it.

 **BOEING**

For your protection

2 Oklahoma employees earn key certification to help speed processes

By JENNIFER HOGAN

Ray McKee and Darren Stout recently joined an elite group of professionals with highly distinct knowledge and skills in the world of classified information protection.

The two Oklahoma City-based Boeing employees are among only 82 individuals in North America and the only employees at Boeing who have TEMPEST Level II certification to test, design and approve work performed on classified systems. These systems can encompass anything from a computer program to airplane communications.

Testing for TEMPEST—which refers to the unintentional transmission of signals containing information—takes place anytime changes are made to a classified system (for more on TEMPEST, see box at right). The testing, which Boeing pre-

viously contracted with outside companies, ensures that the system changes do not produce any unintentional transmission of information.

With their certification, McKee and Stout now can investigate and mitigate the risk of information leakage. This certification also provides confidence to customers that Boeing has experts within the company prepared to address requirements of TEMPEST. What's more, it helps reduce cycle

“This proves I could achieve what I once thought was impossible.”

—Darren Stout of IDS, after earning TEMPEST Level II certification

time in defining TEMPEST requirements, design and verification across several programs and locations within Boeing.

Preparation as well as the security-clearance requirements for TEMPEST certification are rigorous and demanding. McKee and Stout took several courses at the National TEMPEST School at Lack-

TEMPEST in an acronym?

What does TEMPEST stand for? When used in talking about the certification needed to test, design and approve work done on classified systems, TEMPEST actually is a code word—and not an acronym.

In this context, TEMPEST refers to investigations and studies of “compromising emanations”—unintentionally emitted signals from electronic equipment that, if intercepted and analyzed, would disclose sensitive information.

TEMPEST is administered by the U.S. government.

land Air Force Base in San Antonio before attempting the exams. During the courses, the instructors often emphasized the difficulty in passing. For instance, last year only three out of 23 persons attempting the Level I certification passed the exam.

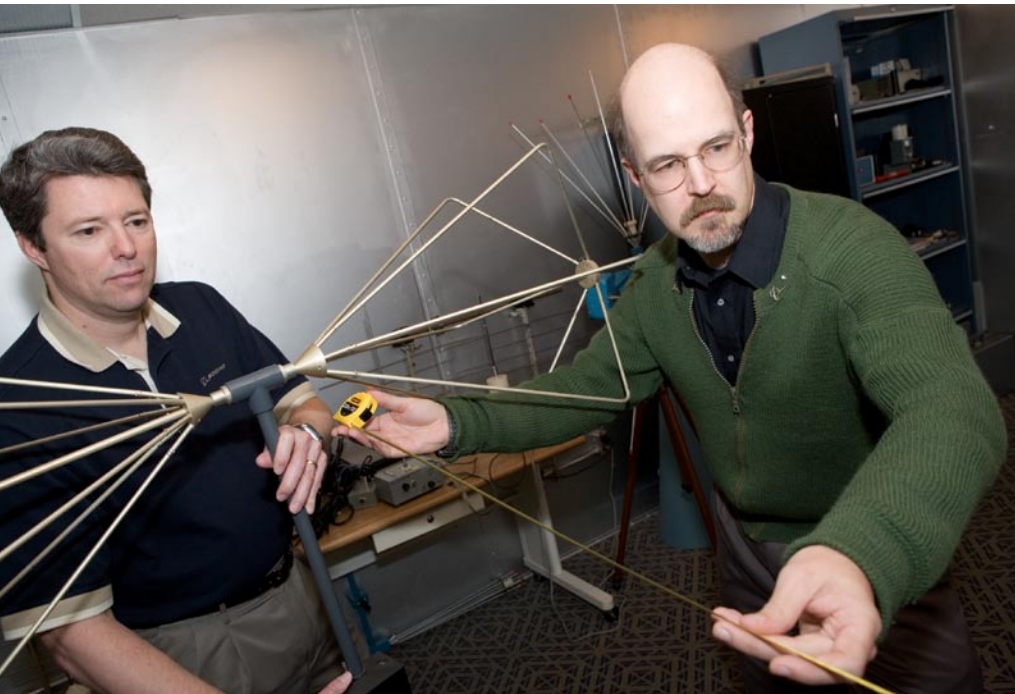
The actual six-course training, consisting of two levels, can take two to four years to complete. Level I certification has two parts: a six-hour, 110-question closed-book written examination and a six-hour laboratory test. The Level II certification has another six-hour, 110-question closed-book written examination. Each element requires a 90 percent or better score to pass.

“As grueling as they were,” Stout said, “I was not nervous.” Both McKee and Stout said their Electromagnetic Interface experience at Boeing helped.

“During the lab exam, I struggled with finding and interpreting one of the test signals,” McKee said. “I had a breakthrough with only about 30 minutes of the six-hour test to go.”

“This proves I could achieve what I once thought was impossible,” Stout said. McKee agreed and added: “I see a whole new world of opportunities.” ■

jennifer.c.hogan@boeing.com



PETER GEORGE PHOTO

Ray McKee (left) and Darren Stout measure an identified test signal at the National TEMPEST School in San Antonio. By earning their TEMPEST certification, McKee and Stout give Boeing expertise in adhering to TEMPEST requirements—and help cut cycle time in handling TEMPEST-related requirements.

Science, tech —and lives

Inventor contributes at work, in community

BY STACEY RITTER

*"Nobody cares how much you know,
until they know how much you care."
—Theodore Roosevelt*

Carl Vorst knows a lot and cares a lot. About technology and ideas that make for a better world. About helping Boeing teammates succeed. And even about abandoned children in Haiti.

A technical fellow with Training Systems and Services, a division within the Integrated Defense Systems' Support Systems business, Vorst has aimed high and succeeded in his career at Boeing, which has lasted more than 40 years. He's made numerous contributions as an inventor, as a teacher and as a member of his community—all of which reflect the Boeing leadership attributes.

Eureka!

Here are some of Carl Vorst's top inventions.

The **Image generating means** patent was the basis for VITAL III, the first in a series of low-cost out-the-window visual systems for pilot training that provided a display of airport runways and other features. This technology forever changed pilot training.

The **Digital-to-analog converter interpolator** invention created a hybrid between the early VITAL III technology and that of modern visual simulation systems. Specifically, it allowed the display of textured images by the VITAL system.

The **Gaze tracking system, eye-tracking assembly and an associated method of calibration** invention allowed the control of an eye-tracked high-resolution display system for fighter pilot training. It used the pilot's helmet visor to give a tracking camera an unobtrusive view of the pilot's eyes.

Early in his career, Vorst invented the Raster Blaster. This device creates an airport picture for a simulator pilot by drawing each element of the scene, such as a runway paint stripe, one at a time, letting the eye combine the separate elements into a complete picture. The Raster Blaster expanded the capability of McDonnell Douglas' VITAL product line—a digital visual-simulation pilot-training system—by adding depiction of airport runway surfaces and terrain at a very low cost.

Since then, Vorst has continued to lead the way by acquiring an additional six U.S. patents. He's twice received Boeing's annual Special Invention award, which honors top inventions across the enterprise for unusual innovation and strategic business value.

Vorst and teammate Tom Heiligenstein were recognized in 2000 for their Apache Longbow Crew Trainer display system, which gives pilots in an Apache Longbow aircrew trainer a realistic view of the outside world. And in 2006, he and teammates John Aughy, Steve Swaine and Mike Rohr were acknowledged for their Visor Eye Tracker invention. Through this new technology, Boeing provided "an economical approach in providing pilots with the capability to see targets at real-world ranges," Vorst said. "We are able to provide 20/20 acuity with 11 projectors instead of 99. This is a huge cost savings for our customers."

Both inventions gave Boeing a competitive advantage in the visual system markets and contributed to the growth of its Training Systems and Services division.

"What is really exciting about looking back over Carl's career is not just all that he's seen, but how much of a difference he has made," said Steve Swaine, director of the Training Technology Center. "It is this expertise that makes him a valuable leader, inspiring those around him."

Vorst takes this leader role very seriously, as a mentor both inside and outside the company. "By allowing others to leverage my knowledge and build on it for their own success, I get a chance to see a part of myself in what they do," he said.



PHOTO COURTESY OF CARL VORST

Tech fellow Carl Vorst with a resident at House of Hope, a home for orphaned and abandoned girls in Haiti. Vorst and his wife have worked at the home for 17 years.

Thomas Knize is lead display systems engineer for Training Systems and Services. "Over the course of my nearly 30 years at Boeing, I have been influenced by a select few individuals whom I have chosen as role models. Carl Vorst is, without a doubt, at the top of that list," Knize said. "His technical knowledge, tireless work ethic, and commitment to excellence are unparalleled in our industry."

Yet Vorst's dedication and care are not limited to his profession. He and his wife, Carole, are responsible for House of Hope, a home in Haiti that cares for orphaned and abandoned girls aged 3 to 14.

Vorst and his wife began their service in Haiti as a result of a church mission trip in 1990. In 1995, the founder of House of Hope asked them if they would be interested in taking over the work. They accepted and received management responsibilities for the orphanage.

Vorst travels to Haiti at least four times a year to ensure the house is running smoothly and to visit with the girls. While in the United States, he manages the organization and is responsible for bookkeeping, fundraising and keeping the supporters advised. "Our time spent with these children is not just an investment in their lives, but an investment for generations to come," Vorst said. ■

stacey.l.ritter@boeing.com



Sealing the deal

After 2 great years, BCA Sales prepares for future challenges

By DEBBY ARKELL

Ask any Boeing Commercial Airplanes Sales director what it takes to sell airplanes, and you'll learn that it's important to be able to handle rejection. Surprisingly, you'll also learn that it's become just as important to be able to handle success.

The past two years have been very successful for Boeing's commercial airplane business in spite of challenging global, economic and competitive markets. In 2005 and 2006 BCA logged 2,046 airplane orders from more than 100 customers worldwide. Now, with economic indicators showing an air-travel market that's rebounded, BCA should be basking in the glow of success. Right?

Not exactly. Humility, focus and listening to customers are the watch words. Despite favorable market trends, challenges remain for Commercial Airplanes. Since orders placed today may not result in delivery for several years, Sales leaders must

convince customers that Boeing products are worth the wait. Also, BCA must deliver flawlessly on existing customer commitments. And finally, continuing to maintain and advance relationships as the pace of business picks up will be essential.

"Granted, 2005 and 2006 were tremendous years," said Larry Dickenson, vice president of Sales for Boeing Commercial Airplanes. "However, we can't rest on our laurels. We absolutely must remain focused on meeting our customers' needs now and into the future."

WHERE WE'VE BEEN

The commercial airplane market was in

a dismal state following the terrorist attacks of Sept. 11, 2001. Air travel dropped precipitously, carriers lost revenue like never before, and airplane manufacturing saw serious cutbacks in production rates and work force. Then came the severe acute respiratory system epidemic of 2003, followed by recent record-high oil prices. That's made carriers worldwide seek additional ways to cut costs and keep people moving.

Yet Boeing's orders have steadily increased. And it all comes down to one thing, Dickenson said: "Our sales strategy is simple: Value. Our products provide more value than those from the competitor. The competitor's strategy is discount. We may never have the lowest prices, but we will always have superior value."

An airline's measure of efficiency is seat-mile costs, or the amount it costs to fly one passenger one mile. Fuel burn is a big part of that measure, as fuel can be a bigger cost to airlines than payroll. As a result, 2005 and 2006 order totals were driven in part by airlines needing to replace their airplanes with more fuel-efficient products.

The value in Boeing's product strategy proved to be instrumental in this endeavor. Commercial Airplanes has a comprehensive and fuel-efficient product line to offer its customers; every airplane model in BCA's lineup is more fuel-efficient than its equivalent Airbus competitor, according to BCA.

Additionally, BCA's product strategy supports the idea that people prefer to fly point-to-point—that is, nonstop to their destination—instead of switching planes at large airports. The value provided by Boeing products gives carriers the option to fly point-to-point.

Though the product line is strong, sales are not a slam-dunk, said Vienna-based Sales Director Chris Jellen. "Customers have choices. It is up to us to convince customers that our products provide the best value."

STARTS, ENDS WITH CUSTOMERS

Sales campaigns start with a Boeing core competency cited in the company's Vision 2016 mission statement: detailed customer knowledge and focus.

As shown in this chart, demand for both Boeing single- and twin-aisle models is strong. Sales veterans said this across-the-board growth makes today's market upswing different from those of previous years.

Value is ultimately determined by the needs of the customer and the realities of the business environment in which customers compete. That's why customer relationships are critically important. "We simply must know more about our customers than they know themselves, and we must we show appreciation for their trust and confidence in our business," Dickenson said.

To that end, Commercial Airplanes' 125 Sales directors worldwide spend a considerable amount of time with customers, learning their business and understanding their needs. These directors work hard to ensure the customer regards Boeing as a partner, not merely a supplier.

"Our solid product strategy has taken years to evolve," Jellen said. "We combine that with working closely together with the customer to create a value proposition that matches our products with their route structures."

Thomas Kleibl, chief financial officer and member of the Executive Board at Austrian Airlines, said the Austrian Airlines Group is very satisfied with the positive relationship the company has enjoyed with Boeing over the years.

"Boeing has been a very professional partner, and we appreciate their commitment, such as what we experienced during the recent Boeing 777 delivery process and seat program," he said. "Putting a strong focus on the continuous improvement of quality, reliability and safety of our products and services—and delivering—is as

By the numbers



12 Percentage of Commercial Airplanes revenue that came from Commercial Aviation Services sales of services in 2005-2006

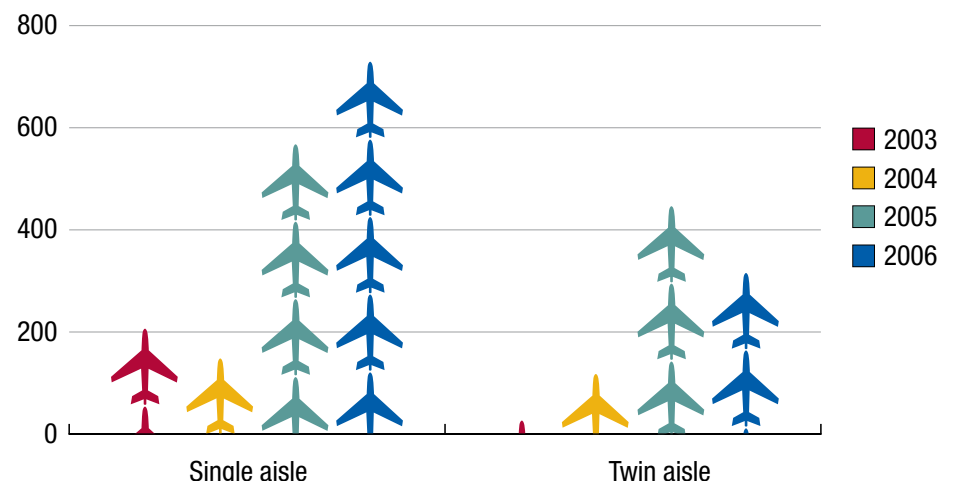
Percentage of Boeing airplanes in the overall fleets of the top 25 airlines in the world **67**

1,002 Net number of Boeing commercial airplanes ordered in 2005

Number of customers purchasing Boeing jetliners in 2006 **93**

1,044 Net number of Boeing commercial airplanes ordered in 2006

Boeing Commercial Airplane Orders 2003-2006



Source: BCA Orders and Deliveries Web Site



Sales Director profile: Debra Santos

Boeing Commercial Airplanes has 125 Sales directors in more than 14 nations, including London-based Debra Santos. *Boeing Frontiers* recently talked with Santos about what qualities are important in her line of work.

Q: What skills have helped prepare you for your role?

A: Being a Sales director takes a strong basic set of skills that anyone could have: Company knowledge, product knowledge, business acumen, good working relationships and networking skills. I've learned that having a broad strategic foundation yet remaining flexible and adapting to new insights is very important. Understanding products and product positioning, marketing and creativity is equally important, and my Boeing career prior to this job prepared me for that. Previously I was the director of Competitive Analysis, and in my more than 20 years with Boeing I've also worked in Engineering, Marketing and Product Marketing. Cultural factors also come into play in this role, even among English-speaking groups of people. Sensitivity to nuances and native cultures is very important.

Q: Tell us about your customers.

A: My primary customers include easyJet and Monarch Airlines. However, I work with customers in the United Kingdom, Portugal, Greece and Cyprus. Each customer brings a unique set of opportunities when working to develop a strong relationship. We develop strong relationships with them over time through listening, trust, and being their partner as they improve their businesses.

Q: Is there one thing that is more important than another in working with customers?

A: Understanding your customer's business requirements is very important, but how you work with people is just as important—if not more so. Airlines, after all, are run by people. I found having to quickly get to know customers, to understand their business and understand the value system within the airline has led to successes like we had with Monarch Airlines—an Airbus customer—and their purchase of six 787s last year.

—Debbi Arkell

ADRIAN BROOKS PHOTO

important for us as an airline as it has been for Boeing as a manufacturer.”

Listening to the customer and acting with integrity are key to maintaining and advancing the customer relationship.

“Our customer team—which includes people in Contracts, Marketing, [Commercial Aviation Services] Sales, Customer Quality Support, Customer Engineering, Field Service, Airline Support and Spares—are all advocates for our customer,” said Dara Schmidt, Seattle-based Sales director for The Americas, who’s responsible for Southwest Airlines and Alaska Airlines accounts. “We must listen and anticipate our customers’ needs and deliver results. This is critical to developing relationships.”

NOW AND THE FUTURE

Commercial Airplanes is at the top of a very strong cycle, and recent sales are validating the BCA product strategy. So what does this mean for the Sales team and other BCA employees in the years to come?

“Leaders who were here long before me have worked hard to establish our product strategy, to determine where we need to go with our product line and how to reduce costs,” said Debra Santos, a London-based Sales director. “Now it’s up to all of us to continue down that path and deliver.”

“Our goal will always be to sell more airplanes than we’re building,” Dickenson added. “One of our biggest challenges to overcome is continuing to sell airplanes to customers with a production-schedule

skyline full so that deliveries are several years out. It’s difficult.”

As the market is improving, so is the demand for keeping planes in service. If customers can’t take delivery of new airplanes until 2013, for example, their older airplanes have to last until then. That makes Commercial Aviation Services an especially valuable sales partner.

“It is now a necessary part of our new-airplane sales strategy to create a value proposition that demonstrates our new airplane in 2013 is better than the one the customer could get in 2009—and to show customers how Boeing can help them successfully bridge that gap through services CAS can provide,” said Dan da Silva, vice president of Sales and Marketing for CAS. Among

the many services: interior upgrades, and technology-based improvements such as avionics upgrades and the addition of airplane health monitoring systems.

Customer relationships will continue to play a big role. Members of the Sales team and their partners are constantly seeking deeper customer knowledge and stronger airline relationships. Changing regulatory and competitive environments put a premium on listening, understanding each customer's business model and how it's changing, and adjusting to industry developments.

"Our customers have never been under more pressure," said Schmidt. "Competition is increasing. Changes in the regulatory environment in such areas as security add to the pressure. And newer, more fuel-efficient airplanes that customers may want are years away from delivery. Responding to our customers needs and continuing to find ways to partner with them are of the utmost importance."

"We sell airplanes based on the value of our products and services."

—Dara Schmidt, Commercial Airplanes
Sales director for The Americas

Santos and Jellen both see a renewed focus on the environment, particularly in Europe, the region they support. That brings another set of challenges Boeing must step up to. "We need to help focus our industry's messages regarding environmental concerns—such as emissions, noise, fuel efficiency, and manufacturing processes—while we continue to work together on improvements in all these areas," Jellen said.

Jellen also sees future challenges related to Airbus, noting this competitor is addressing product line, production and cost issues. "We must not lose sight of the fact that at the end of this process they will be stronger," he said.

Lean and other initiatives have helped Boeing drive down costs and keep the company competitive. At the end of the day, airplanes built and sold are tools for customers to grow—and grow profitably.

"Ultimately, we sell airplanes based on the value of our products and our services," said Schmidt. "We, The Boeing Company, must deliver flawlessly on our world-class support and world-class products now and into the future." ■

debra.j.arkell@boeing.com

Now it's our turn

What do the order successes of the past two years mean for Commercial Airplanes? Below, some BCA employees speak on this topic—and explain what they're doing to meet future challenges.



Michelle Larsen

Customer Quality Support, 747/767/777

I am working with my organization to educate Boeing employees on our airline customers' countries and cultures. As airplanes move into position in the factory, we try to introduce employees to the customers and encourage them to say hello. Showing Boeing pride and making customers feel welcome develops good relationships from the ground up. Ultimately, it helps us when there's an issue with an airplane if we've established a relationship with the customer—it builds trust.



Pete Schupp

Structures Design Engineer

It's been exciting to see such a large percentage of our orders in the past two years be for the 787. It shows our innovation in design and ability to adapt to new customer requirements. Our recent sales are proof that innovation in engineering is worth the risk, and it opens the door to using and applying those new technologies to our next generation of products.



Trish Kelley

Human Resources

In Human Resources we're focused on managing critical skills such as engineering, which is always a challenge, but now even more so as we work to get the right skills in place to meet customer commitments. We're also using Lean techniques in manufacturing and office environments to get people engaged, build teaming relationships and empower people to make needed changes and improvements.

Back to the future

Alaska Airlines begins 2007 by honoring its past—and looking ahead

By DEBBY ARKELL

Alaska Airlines has lots to be proud of in its 75 years of operations. It was the first airline to sell tickets to passengers via the Internet, and the first to let customers check in online and print boarding passes through the Web. And through its cargo service, the airline provides a lifeline to remote communities in Alaska that endure long, hard winters.

This year, the Seattle-based airline is commemorating its 75 years of accomplishments. As it does so, Alaska Airlines will keep looking ahead. Not only is this all-Boeing operator in the midst of transitioning to an all-737 fleet, but it's continuing to remain in the forefront of innovation by focusing on the customer experience and making the most out of technology.

Alaska Airlines, the ninth-largest carrier in the United States, is characterized as a low-fare carrier—yet with a twist. It's low fares plus “the mores,” said Chief Financial Officer Brad Tilden. “When we look at our competitors, there are those that offer low fares and those that offer big and complex networks. We aim for the ‘sweet spot’ in the middle—great fares plus a little more:



ED TURNER PHOTO

Bob Gregg of Boeing touches up the “Proudly All Boeing” stencil on an Alaska Airlines 737-800. “We are proud of the relationship between our two companies and felt our ‘Proudly All Boeing’ logo was a great way to highlight this,” said Brad Tilden, Alaska Airlines chief financial officer.

first-class seating, meals, and extra conveniences when purchasing tickets.”

Alaska's mission is to provide the best value to customers of any airline, and to be the preeminent airline for customers living in Alaska and the Pacific Northwest. The carrier's focus is on growth from Seattle and Portland, Ore., to other U.S. destinations.

Alaska's sister-carrier relationship with Horizon Air extends the route system to include many cities served only by Horizon Air in the Pacific Northwest.

Alaska Airlines leaders target earnings ranging from 8 to 10 percent per year, and

they are quick to note that Boeing will play a role in the airline's long-term success.

Last year, the carrier decided to transition to an all-Boeing all-737 fleet. Using a single-model fleet to lower costs, streamline processes and increase revenue is at the heart of Alaska Airlines' growth strategy.

“Our brand-new 737-800s, with their tremendous payload and fuel efficiencies, are already helping us manage our costs,” said Fred Mohr, the airline's vice president of Maintenance and Engineering. “The 737's leading-edge technology helps us operate in landing conditions that give us competitive and safety advantages. 737s

Alaska Airlines celebrates its 75th anniversary this year. To commemorate the occasion, the airline had its employees select from among four past liveries one to be painted on a specially designated 737-800. This joins four other unique Alaska Airlines liveries: Spirit of Make-A-Wish, Salmon-Thirty-Salmon, alaskaair.com and Disneyland.



ALASKA AIRLINES PHOTO

allow us to provide quality service to our passengers, taking them where they want to be, when they want to be there.”

Indeed, technology plays an important role in the Alaska Airlines passenger and cargo business. The systems on the 737 aircraft allow Alaska Airlines to fly more reliably to nearly 20 cities in Alaska that often face severe weather. In addition, Alaska’s two 737-400 combi aircraft (configured to carry both passengers and cargo) support locations that lack a transportation infrastructure. Mohr said the services the airline provides to those communities are vital, and the carrier’s employees feel a connection and responsibility to those locales.

“The 737 is critically important to our cargo business in the state of Alaska,” said Mohr. “With the 737 we are able to support their mail programs and deliver everything from toilet paper, to fresh fruits and vegetables, to medicines. This really connects us to those communities.”

CUSTOMER FIRST

Alaska Airlines also has a clearly defined strategy on how best to serve the flying public. Glenn Johnson, senior vice president, Customer Service–Airports, said the best experience for customers in an airport is essentially a “no-hassle” one that speeds them from car seat to airplane seat with minimal delay. To that end, Alas-

A list of firsts

Alaska Airlines is a champion of technological innovation and pioneering customer conveniences. In fact, Alaska Airlines was the first airline to

- Book flights and sell tickets via the Internet (1995).
- Allow customers to check in online and print boarding passes via the Web (1999).
- Introduce wireless check-in using Web-enabled phones and wireless handheld devices (2001).
- Integrate Global Positioning System with Enhanced Ground Proximity Warning Systems. This allows Alaska Airlines to fly contoured approaches and departures with pinpoint accuracy into and out of airports with rugged terrain and weather challenges (1996).
- Use the Head-Up Guidance System on a passenger-carrying flight during foggy conditions (1989).

Source: Alaska Airlines



ALASKA AIRLINES PHOTO

A stilt walker dressed in period costume performs at an Alaska Airlines event held in early March to unveil the carrier’s 75th anniversary airplane, dubbed “Starliner 75.”

ka Airlines is investing approximately \$18 million in its patented “Airport of the Future” concept at its hub, Seattle-Tacoma International Airport. Nearly 50 percent of all SeaTac passengers fly on Alaska Airlines, and Alaska sees its Airport of the Future concept as a way to speed those customers through the preflight process.

The concept begins with removing the traditional ticketing counter and replacing it with multiple electronic, bilingual kiosks. Travelers use these kiosks to check in and print boarding passes—if

they haven’t already done so online before arriving at the airport.

Travelers checking bags then proceed to a nearby redesigned bag-drop area where agents generate bag tags and place bags on conveyors. The traveler then proceeds to airport security and on to the gate. Service counters will still be available to help with a full-service transaction such as changing flights, or to assist special-needs travelers.

The concept has been in operation since 2004 at Ted Stevens International Airport in Anchorage, and travelers and Alaska

Fast facts about Alaska Airlines

Type of airline:	Major, low-fare U.S. carrier
Relative size of airline:	Ninth-largest U.S. carrier
Founded:	1932 in Anchorage, Alaska
Headquarters:	Seattle
Chairman, President and CEO:	William S. Ayer
Number of employees:	10,000
Total destinations:	58
Average daily flights in 2006:	494
Total departures in 2006:	178,038
Total passengers enplaned in 2006:	17.2 million

Current fleet mix *

737-400	37
MD-80	21
737-700	20
737-800	21
737-900	12
737-400C	2
737-400F	1

Average daily departures, by region

Lower 48 states	356
Alaska	110
Canada	12
Mexico	16

* as of March 31

Source: Alaska Airlines

Airlines employees alike are benefiting. Alaska agents already are seeing customer-service efficiencies by being able to process more passengers per hour.

“Passengers love it, once they’re used to it, because it dramatically reduces the time it takes to get to the gate,” Johnson said. “In fact, in Anchorage we’ve seen the time it takes to get from curb to gate cut in half.”

The SeaTac project is due to be complete by the end of this year. Meanwhile, the airline is working hard to make reservations and sales functions as efficient as possible.

“We want to give our customers the ability to easily book travel, obtain refunds and use miles,” Tilden said. Among the recent changes: The airline switched to all one-way fares and no longer requires an overnight stay for the best fare. Also, its frequent-flier-program members can use miles to buy one-way tickets.

Ultimately, Alaska Airlines believes that its distinction starts with its people.

“All our folks delivering service with ‘Alaska Airlines spirit’ make a difference every day,” Johnson said. “Every point of contact is an opportunity to win a customer for life.” ■

debra.j.arkell@boeing.com

Trust in action: the Boeing-Alaska relationship

“There is a tremendous amount of integrity at Boeing and in ‘getting it right’ for the customer,” said Brad Tilden, Alaska Airlines chief financial officer. That sentiment is echoed by Alaska Airlines employees Russ Summers and Andy Leiper. They work at Boeing locations at Seattle’s Boeing Field and in Renton, Wash., ensuring Alaska airplanes move smoothly through the Boeing production system.

With Boeing expected to deliver about 14 airplanes this year to Alaska Airlines, Summers and Leiper figure they’ll be busy. However, in a job where looking for—and resolving—problems on a product could create adversarial feelings, they have a different outlook.

Leiper focuses on the 12-month schedule of airplanes in work, and he works with Customer Engineering, Sales, Contracts and more. Meanwhile, Summers looks for items that will affect the airplane in service. He conducts short-term airplane flow inspections and, ultimately, customer acceptance.

“I do my job as a business partner with Boeing—100 percent,” Summers said. “If damage occurs during manufacturing, we work together with Boeing to evaluate Boeing’s proposed repairs and determine how that would affect Alaska operations.”

The duo said they’re amazed to see the pride that Boeing people have in their work. “I do a lot of deals with a handshake, a phone call, or e-mail,” Summers said. “The contract can follow, but with the trust we have, we’re able to get started immediately on working the solution.”

—Debby Arkell

JIM COLEBY PHOTO



Andy Leiper, an Alaska Airlines company acceptance inspector, views a 737 landing gear at the Boeing factory in Renton, Wash. Leiper performs inspections prior to aircraft acceptance and delivery.



At left, Lee Monson (center) is given a tour of the new Mukuru School by Kenya Airways CEO Titus Naikuni (right). Boeing contributed nearly a quarter of the cost to build the new school—which is shown below, with the old school in the foreground on the left.



“I was amazed by this young man’s story,” Naikuni said. “I asked him if there was anything I could do to help him, and I was surprised by his compassionate response that he would prefer that I offer assistance to his old school.”

Naikuni contacted the school’s headmaster—who asked only that the airline build an additional classroom. Naikuni looked around and told the headmaster: “I’ll do you better than that: We’ll build you a new school.”

Shortly after, Naikuni shared the story of meeting Ali with representatives from Boeing and KLM, which owns part of Kenya Airways. Both parties agreed to provide funding; Boeing’s contribution covered nearly a quarter of the construction cost.

The two-story school is now finished and currently being equipped with furniture and supplies, including computers. The school boasts eight modern classrooms, a library and a well-drained sports field.

“Being able to look back and know we’ve partnered with a customer on improving something as meaningful as education is a great testament to our close working relationship,” said Lee Monson, Commercial Airplanes vice president of Sales for the Middle East and Africa.

This project marks Boeing’s latest involvement in contributing to educational improvement in Africa. Mike Smith, Commercial Airplanes international Sales director responsible for Kenya Airways, initiated a school sponsorship program in 2003 that provides supplies to five Nairobi-area schools. The airline and Boeing also work together on an annual student exchange program for U.S. and Kenyan students.

Ali will graduate from Drew in 2010 and plans to pursue a career in international affairs. “I hope Mr. Naikuni’s generosity and efforts to make positive changes continue to improve education in Africa—and that others will benefit as I have,” he said. ■

brian.d.walker@boeing.com

Cause and effect

Kenya Airways, KLM and Boeing bring good works full circle

By BRIAN WALKER

Drew University sits on 186 serene, heavily wooded acres in Madison, N.J.—and is about as far from the slums of Nairobi, Kenya, as one might imagine. For Nairobi-born Mohamedin Ali, an 18-year-old scholarship student attending this college, the disparity is all too real. And, while he considers himself very fortunate, Ali’s story typifies the Kenyan spirit of giving.

The Mukuru School Ali attended in his youth consisted of three buildings, constructed mostly from corrugated tin and rotting plywood, surrounding a courtyard

that became a muddy pit during the rainy season. Up to 80 students filled classrooms that would be crowded with half that number. And a lack of teaching materials and supplies further hindered education efforts.

Ali was one of many gifted, but vulnerable, children identified by AmericaShare, the nonprofit arm of tour operator Micato Safaris. Enrolled in AmericaShare’s School Sponsorship Program, Ali continued to excel in his studies. Before long, he’d outgrown Mukuru, and AmericaShare found Ali an American couple that sponsored him to attend high school in the United States.

It’s a touching story. But a chance meeting while traveling set the stage for Boeing to take part in creating even greater opportunities for Kenya’s less fortunate youth.

“I was so excited about coming to America to go to school that I wanted to share my story with the gentleman sitting next to me on the airplane,” Ali said. That man was Kenya Airways CEO Titus Naikuni.

The island nation of Indonesia is prone to earthquakes, floods and other natural disasters. Here, a man walks through flood waters in the city of Jakarta. The Boeing site investigation team, which left Jakarta around the same time, witnessed the February floods.



Half a world away

Boeing team in Indonesia finds hope, optimism survive in the aftermath of tragedy

Photos by David Evans for Mercy Corps and CARE



Boeing employee Bob Seipel was part of a team that visited the tsunami-stricken areas in Indonesia to ensure that Boeing contributions are being used effectively. Here, he observes the coastline in Aceh province. Debris and rubble still mar the shores. Damaged boats sit on dry land, far from the water and clearly unusable.

By SUSAN BIRKHOLTZ

If you listen closely to world news on a regular basis, you might wonder how the people of Indonesia can continue to survive despite what seems to be a continuous string of natural disasters. For this equatorial archipelago, it's not a matter of if a disaster will happen; it's when—and how bad it will be.

When you add in the fact that the country is still recovering from a devastating earthquake and tsunami that in late 2004 killed 180,000 and ruined the livelihoods of hundreds of thousands more—as well as from a long civil conflict—it's hard to think that anything but despair and hopelessness could thrive here.

But a Boeing team, which recently conducted a site investigation in Indonesia's tsunami-affected Aceh province of Sumatra, discovered the opposite. In fact, team members were astonished by the will and determination of the people they met there not just to recover from the tragedy, but to triumph over it.

"The stories of these people are gratifying and energizing," said Bob Seipel, a program manager for Boeing Space & Intelligence Systems Mission Systems, and a member of this delegation, which visited the area to ensure that Boeing and employee and retiree contributions are being used effectively. "They have lives to lead, and they lead them largely independently, but now more successfully thanks to support of organizations like CARE, Mercy Corps and the American Red Cross and fueled by donations from people like you and me and companies like ours."

Boeing corporate and employee/retiree dollars were vital to the relief efforts. Contributions totaled more than \$4.5 million. Employee and retiree contributions accounted for almost \$1.9 million of that total, which also included a \$1.8 million company match and a corporate contribution of \$1 million.

Seipel and the Boeing team—led by Boeing Global Corporate Citizenship representative Linda Martin and including Paul Walters, Boeing's regional vice president for the Southeast Asia region—were encouraged by their experiences in Aceh. "We were gratified not only by the commitment of the people we met to improve their lives, but also by the work being done by the in-country staff of hosts CARE and Mercy Corps," said Martin, referring to two of the three nongovernmental organizations that received Boeing contributions. A meeting with the American Red Cross, the third recipient, took place during the trip as well.

Each organization has a different approach and areas of focus, Martin said. For example, Mercy Corps activities do not include house building as CARE's do. However, she added, "each of these organizations shares a common commitment to measurement against stated objectives, regular evaluation of the progress made against these objectives, and holding themselves and their beneficiaries accountable for ensuring that funds are being spent in order to achieve the greatest possible impact."

"Our CARE hosts told us that in the two years since the organization launched its tsunami-response program, it has been audited more than 30 times, by both internal and external audit

■ FEATURE STORY

It's customary for Banda Aceh residents to gather every Friday near the entrance to Banda Aceh harbor to watch the sunset. It was a traditional meeting place before the tsunami—and it is now again, two years later.



The Boeing team traveled to Saree to visit with refugees from a remote island off the west coast of Sumatra called Pulo Aceh. The tsunami killed about 40 percent of its population and left the land unusable and partially underwater. Here, a boy in Pulo Aceh shows Bob Seipel an easy, but unusual, way to make a string bracelet.

teams,” said Seipel. “Imagine having to deal with being audited at Boeing that often!”

Boeing also is committed to accountability in the work the company does with the community, Seipel said. “Through our Global Corporate Citizenship function, the company holds itself accountable to our stakeholders—which includes our employees—to be conscientious stewards of corporate and employee contributions,” he said.

GCC Vice President Anne Roosevelt said philanthropy, such as the company’s efforts in disaster relief, is just one way the company can demonstrate its commitment to global corporate citizenship. While it is this function’s responsibility to implement the company’s philanthropic strategies, Roosevelt sees its role as much broader than that—to help the enterprise understand what it means to be a global corporate citizen in everything the company does.

“The generosity of spirit that our employees and retirees demonstrated by giving to tsunami relief—not just the amount of money they gave—as well as the company’s commitment to making sure that money is being used responsibly, are great examples of global corporate citizenship in action,” she added.

Seipel had the opportunity to experience this generosity of spirit during his tour of several U.S.-based Boeing sites in the weeks following the trip. “I was struck by how engaged and interested the employees who attended the meetings were in what I experienced while in Indonesia,” Seipel said.

“That’s what global corporate citizenship is all about. It’s the concern for something outside yourself—whether that something is next door or halfway around the world—and the positive action that follows from this concern. What I experienced both during the trip and afterward has made me prouder than ever to be a part of The Boeing Company.” ■

susan.l.birkholtz@boeing.com

To read more about this trip, visit the Boeing Frontiers Web site at www.boeing.com/frontiers to read daily reports turned in by the team during its trip. These reports originally appeared on Boeing News Now, the Boeing news site on the company’s intranet.

Bob Seipel inspects a stalk of rice with a farmer in a rice paddy outside of the city of Banda Aceh. This is the first successful harvest after the tsunami, which caused salt-water floods that rendered the land sterile. The yield will provide seed for next year's crop, which will be sold at market.



Boeing's Bob Seipel tries his hand at brick making in Lam Ujong, while a worker in the factory looks on. She makes up to 1,300 bricks each day. The factory is actually a small group of modest buildings consisting of a kiln and two thatched-roof open-air structures where the bricks are made and dried.



Bob Seipel (center, seated) and Linda Martin of Global Corporate Citizenship (at Seipel's left) review a map of locations that the Boeing site investigation team will visit during one day of the team's trip.

For more photos and some of the most frequently asked questions Boeing employees asked Bob Seipel about his trip, [see Page 43](#).

Aceh business owner Ms. Sadiyah as she offers a plateful of cakes to visitors including Bob Seipel. In business for 25 years, she was able to expand her family-run business thanks to a \$150 cash grant provided by Mercy Corps. Now she makes 100 bags of six cakes each every day, working from sunrise to sunset with her daughters and other female relatives at her side.



The Boeing group traveled to Lambaro Skep to visit the Puskesmas Pembantu Health Clinic, one of four provincial clinics built by CARE in conjunction with the Johns Hopkins International Program for Gynecology and Obstetrics. Here, the clinic's head explains to Seipel how the site helps the village's young mothers and children.



Seipel shows pictures of his three sons to some of the women participating in an organic garden project in Miruk Lamreudeup that is funded by Mercy Corps and Green Hands.



Smiling, mischievous children seemed to be everywhere as the Boeing group walked through villages during the site investigation. Here, Bob Seipel is trying to get the attention of two boys, Ijal (center) and Buyung.

What employees wanted to know

Boeing employee Bob Seipel was part of a Boeing team that recently visited Indonesia to see how donations from the company and its employees and retirees were supporting post-tsunami recovery efforts. After returning to the United States, Seipel made presentations at various Boeing sites to tell about what he saw. Here are some of the questions employees most frequently asked him, along with his answers.

Q: Is there a warning system in place now for future tsunamis?

A: This is being addressed at multiple levels with local disaster-preparedness education and drills, as well as plans for an Indian Ocean tsunami warning network. Also, all infrastructure and homes are being “built back better” to withstand damage from earthquakes, while any new schools built must be at least two stories tall to protect students from flood waters in an emergency.

Q: Are people being allowed to rebuild homes in coastal areas?

A: Yes. This region has had a thriving civilization for many centuries, and ancestral lands are well defined. Also, many villages are dependent on the fishing industry and need to be near the water.

Q: I'm having a hard time visualizing a 90-foot wave. Are there photos?

A: No, but teams from the U.S. Geologic Survey confirmed this when they measured the damage in January 2005, immediately after the tsunami, to determine the wave heights and the inland limit of flooding, which in some places was more than three miles.

Q: How was the water supply affected? How was the salt water removed from the fields?

A: Many wells were permanently contaminated. Major irrigation projects, many taking more than a year, were required to get fields back into shape to grow rice. Some fields, however, will likely never come back.

Q: How did Boeing identify the aid organizations we contributed to?

A: The Global Corporate Citizenship function carefully chooses the organiza-

tions that receive funding for disaster relief and any other corporate grant. In this case, CARE, Mercy Corps and the American Red Cross happened to be trusted organizations with established relationships with our company, and all had a regional or country presence before the tsunami struck.

Q: How did Boeing ensure money was not diverted away from those who needed it?

A: By working with trusted aid organizations who gave money directly to local communities, Boeing was able to avoid the government channels and contractors where corruption is most likely to occur. The organizations have their own fraud controls as well.

Q: Who audits these aid organizations?

A: While our site investigation was one form of “audit,” many other donor organizations conduct formal accounting audits. Examples would be USAID, other governments and major corporations.

Q: What is Boeing continuing to do in this area?

A: The initial donations of private funds for tsunami relief are not expected to run out until later in 2007. In addition, Boeing Global Corporate Citizenship and Paul Walters, Boeing regional vice president for Southeast Asia, continue to be engaged with these agencies to identify future needs. For example, the company recently contributed \$50,000 toward relief efforts for the March 6 earthquake in Sumatra.

Q: Will there be other site investigations like this one?

A: Yes. The sites likely to be visited next will be areas affected by Hurricane Katrina to see how Boeing employee and retiree donations to the American Red Cross are being used. Corporate, employee and retiree contributions for Hurricane Katrina relief efforts in Louisiana and Mississippi totaled more than \$9 million, including nearly \$3.9 million donated by employees and retirees.

Q: Would you go back to Indonesia?

A: Given the chance, absolutely.

The Lean machine

Boeing Capital Corp. streamlines processes across entire business

Have you ever thought, “If I didn’t have so many long meetings, I could complete more tasks and create better work”? Many people at Boeing Capital Corp. have kept that thought in mind in their quest to boost productivity.

It’s not because their meetings aren’t valuable. These meetings revolve around whether BCC commits major company funding in support of customers seeking Commercial Airplanes and Integrated Defense Systems products and services. However, the questions BCC is asking include

- Do we need so many levels of meetings to make a final decision?
- Does every function need to attend every meeting?
- Do the meetings need to take so long?
- Are there alternative ways to share critical information about an upcoming investment decision (or deal) so everyone involved can make an informed decision?

Building on momentum generated last fall out of a successful pilot workshop focused on one of its processes, BCC recently conducted a businesswide Value Stream Mapping exercise and developed a Lean Roadmap for 2007 and beyond—all in one big step.

The goal of the VSM workshop was to identify and prioritize opportunities to eliminate waste across all of Boeing Capital. From the workshop, follow-on improvement teams immediately went to work implementing process changes (see chart at right). These improvements help support the companywide Lean+ and Internal Services Productivity growth and productivity initiatives.

As a result of the workshop, the BCC team developed a Lean Roadmap that identifies and prioritizes areas of opportunity and focus for all of Boeing Capital. Rather than randomly selecting areas to apply Lean, the BCC team is now using the roadmap and its recommended schedule of follow-on workshops to get the most from

process-improvement opportunities and efficiently lean out near-term and longer-term processes across the entire organization.

“The roadmap is allowing us to focus our limited resources more effectively in support of lean productivity,” said Sean Jones, director of Investments for Boeing Capital. “We’re getting rid of things that really don’t add value to our business.”

BCC has committed to year-over-year cost reduction and has identified Lean+ as the key enabler to long-term success. With increased visibility into the resources used within processes across the business, along with embedded lean practices

and tools, BCC believes it can continue to exceed annual productivity goals.

“One of the greatest things we’re seeing come out of our Lean initiatives is the willingness of employees to go out and do the right thing on their own,” Jones said. “Our employees now understand the concepts of Lean and don’t have to ask for management approval or wait for formal Lean workshops to improve their own work. In fact, using Lean tools and simple common sense, some BCC employee groups have already implemented their own informal one-day workshops to improve their internal processes and job satisfaction at the same time.” ■

Capital improvements

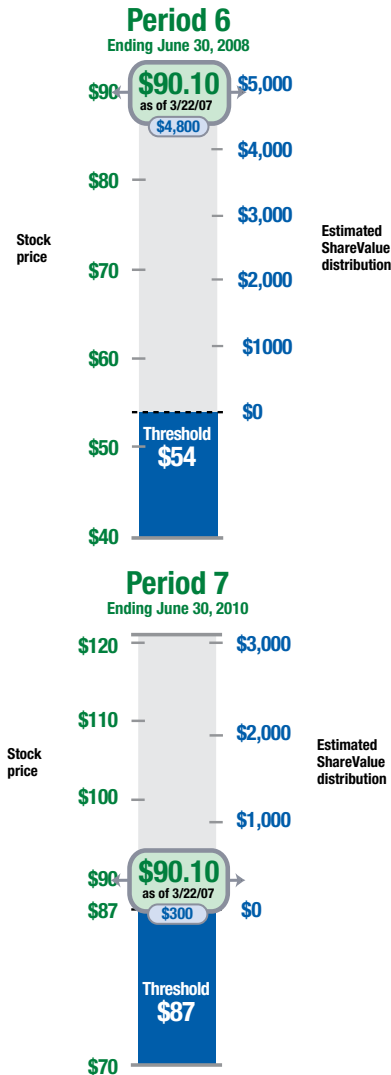
Here’s a look at some of the Lean improvements Boeing Capital Corp. has made.

Function and description	Improvements
<p>Investment Committee</p> <p>The Investment Committee process involves all of the activities surrounding BCC investment decisions.</p>	<ul style="list-style-type: none"> • Reduce the time, number and people involved in pre-approval and Investment Committee meetings • Streamline the communication, collaboration and complex documentation required to finalize a transaction • Give the finance director managing a particular account more responsibility and approval authority—while maintaining management oversight checks and balances, and improving fiduciary responsibilities of functional groups • <i>Improvements expected to cut number of preapproval meetings in half and number of total meetings by two-thirds</i> • <i>Streamlining estimated to reduce total cycle time by 50 percent and number of reviews and approvals by 60 percent</i>
<p>Financial Reporting</p> <p>BCC closes and files quarterly and annual financial-performance reports; this process is also called “closing the books.”</p>	<ul style="list-style-type: none"> • Create earlier subsystem feeds • Automate schedules and reporting systems • Accelerate required reviews and approvals • <i>Time needed to close and file its quarterly books, or financial performance reports, cut from five days to 2.5 days</i>
<p>Use of Enterprise Planning and Analysis System</p> <p>This is a computerized forecasting tool for Boeing financial analysts.</p>	<ul style="list-style-type: none"> • Eliminate significant amounts of manual work • Reduce BCC’s planning-process cycle time • Improve the visibility and quality of data • Integrate BCC’s source system information straight through to the final forecast product • <i>Cycle time cut by approximately 50 percent</i>

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.

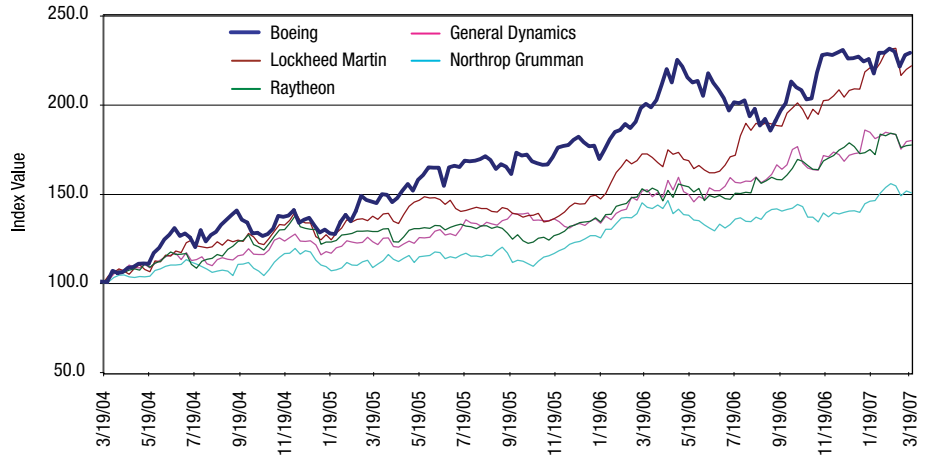
The share price shown is the average of the day’s high and low New York Stock Exchange prices. Updates to participant/employment data will be made periodically.

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

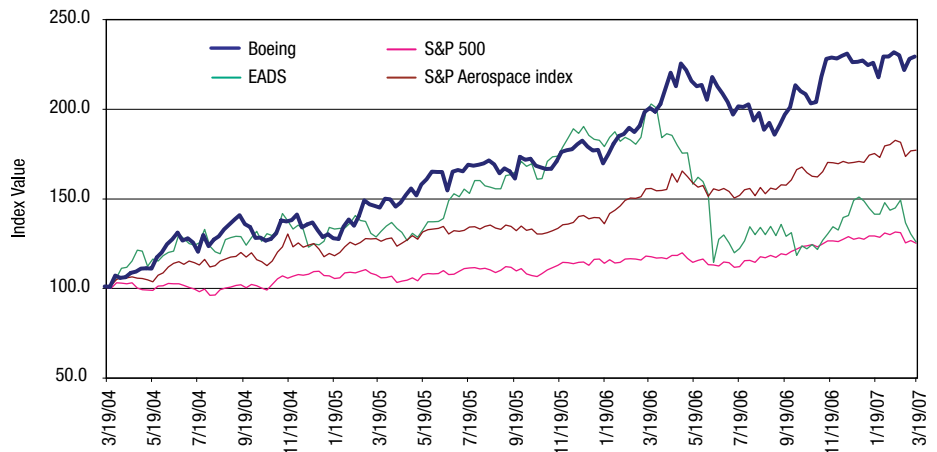
STOCK WATCH

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 March 19, 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 3/16/07	Four-week comparison		52-week comparison	
		Price/value as of 2/16/07	Percent change	Price/value as of 3/17/06	Percent change
BOEING	90.00	90.94	-1.0%	77.85	15.6%
U.S. COMPETITORS					
General Dynamics	77.55	79.25	-2.1%	65.33	18.7%
Lockheed Martin	97.80	101.95	-4.1%	75.95	28.8%
Northrop Grumman	72.57	75.01	-3.3%	69.83	3.9%
Raytheon	53.04	55.05	-3.7%	45.69	16.1%
INT'L COMPETITORS					
EADS *	21.80	25.09	-13.1%	34.40	-36.6%
U.S. STOCK INDEXES					
S&P 500	1386.95	1455.54	-4.7%	1307.25	6.1%
S&P 500 Aerospace and Defense Index	389.18	401.59	-3.1%	341.95	13.8%

* Price in Euros

SERVICE AWARDS:

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

55 Years

Patrick O'Loughlin

50 Years

Raymond Libby
Ronald Moon
Dale Peters
John Reilly

45 Years

Vernon Blubaugh
Richard Campbell
Ronald Hoppe
Jerry Merkel
Jerald Parkison
Joe Powell
Richard Roberts
Thomas Wobbema

40 Years

Douglas Albee
Larry Bauer
Thomas Bell
Ronald Chatmon
Louis Chavez
Benjamin Dominguez
Rodney Fujii
Consuelo Garcia
Glenn Garrett
Ernest Goodrum
Johnny Griffin
Niles Hallie
Jack Hanke
Larry Herrick
William Hill
Virginia Hughes
Wayne Huning
James Kisiah
William Kiine
Frederick Little
James Logue
Ronald Martinez
Barbara McDiarmid
Betty-Lou Mercado
Robert Poirio
Elizabeth Rubio
Robert Schoales
James Shearer
James Sheppardson
Robert Steiner
James Stillman
Rodney Taylor
Terry Teague
Andrew Wold
Lawrence Woodland
Ronald Wyer

35 Years

Bruce Ammerman
Albert Austin
Douglas Baker
Joyce Bay
Frank Berrier
Gloria Beverley
Carl Chambers
Jerri Gievers
Bessie Gratten
Frederick Hadley
Charles Hall

James Hollenbeck
Robert Hoover
Paul Hurd
Odis Johnson
Stanley Malm
Lois Moore
Phyllis Mulliken
Oneita Murphy
Kathleen Nunez
Albert Olesberg
Jeffrey Pakiz
Paul Parsons
Serapio Ramos
Loy Roberts
Daniel Seballoz
Terry Shellhorn
Jeanette Spradley
Judy Spurr
Ronald Talamantez
William Tatham
Jon Terrey
Donald Thorn
Michael Vogt
Gordon Walters
David Weston
Jerry Wilson

30 Years

Elwood Achuff
Marilyn Akutsu
Steven Alston
Laurence Anderson
Leonard Arnett
Robert Austin
Randy Baird
James Baker
Mary Bandini
James Baqai
Jeffrey Barnes
Karen Barnett
Ruben Barroso
Michael Bastunas
Mark Battles
Roger Belt
John Berryman
Scott Bohm
Judith Bohnenkamp
Michael Boness
Douglas Boslaugh
Ronald Brady
Donna Brennan
Michael Brown
Randall Brown
David Burnett
Mark Calkins
Linda Calloway
Linda Carrig
Susan Cashman
Jerry Casper
Jeanne Catron-Gonzalez
Eugene Cauchon
William Chism
Lori Coates
George Cole
Claude Colson
Spruce Cox
Renato Cruz
George Cudiamat
Noreen Culley

Gary Dagan
Rolf Dahmen
Karen Debrecht
Leslie Denney
Don Desa
Phillip Devaney
Arlin Dinius
Diana Dishneau
Arlene Dockett
Bryan Dorwin
James Drake
Richard Dresel
Larry Duke
David Ebenkamp
Dale Eiffert
David Estes
Ronald Eyerkuus
Deborah Feeder
Mark Fenske
Daniel Frankhouser
Terry Gaddis
Gerald Galland
Alicia Gaskin
Catherine George
Donald Gray
Douglas Green
Philip Griesbach
Susan Hammer
Eric Hanks
David Hansen
Emma Heider
William Hembree
Barbara Hernandez
Denise Herzog
Russell Hill
Larry Holmes
John Hopkins
Steven Ikeda
Billy Johnson
Byron Johnson
James Johnson
Jil Johnson
Thomas Johnson
Allen Jones
David Jones
Merrill Jones
Marilyn Kapic
John Kaufman
Sharon Keck
Cecile Kellenbarger
Brian Kindle
Thomas King
Loren Knudsen
John Knutti
Darel Kromarek
William Kruger
Daniel Kuramoto
Kathleen Landino
Roxanne Langer
Lloyd Laplante
Ricky Laramore
Richard Larsen
Robbin Lawson
Gary Lewis
Steven Lightle
Mark Lindgren
Christopher Luke
Steve Lusch
Forrest Luthy

Keith Mack
Susan Maher
Pete Maniaci
Alice McDonald
Mark McGillis
Daniel McGowan
Alan McKim
Daniel Meddaugh
James Meyer
Richard Miller
Robert Miller
Richard Milton
Greg Mladineo
Marty Munsell
Joseph Murphy
Louis Murray
Robert Myers
Michael Newman
Brian Nichols
Florante Pacleb
Jerry Paulson
Robert Peleck
Curtis Penamon
Peter Peterson
David Pierce
David Pontrello
Robert Pritchard
John Purses
Renato Rebillion
William Rengstorf
Roy Ribbers
Robert Richardson
Patricia Rohlinger
Adolfo Ruiz
Joseph Ryan
Charles Sackman
Robert Samuelson
Philip Sauerbrey
Bryan Schneider
David Scholze
Reginald Sheegog
Vicki Shininger
Sherinda Silas
Sandra Simmons
David Skilton
Nathlieth Smith
Raymond Smith
Anita Sorrells
James Spangler
Robert Stafford
Robert Stahl
Robert Starowski
Robert Stevens
Allen Stinde
William Strain
Terry Strong
Roy Stroup
Helen Swanstrom
Edward Sylvester
Edward Tait
Jean Tapp
Michael Thompson
Preston Thompson
George Treser
Joseph Triano
Dean Tsuchida
Jay Vannest
Charles Vargo
Joseph Voyles

John Walker
Janice Ward
Joel Ware
Carlton Weer
Harold Wehrman
Patricia White
Jody Wilkinson
Joel Wilkinson
Richard Williams
Douglas Wilson
Alan Withers
Gregory Wood
Bernard Wright

25 Years

Milagros Adalid
Jean Adams
Tony Adams
Steven Adamson
Kathleen Alarid
Richard Alexander
Sharon Allen
Jeffrey Anders
David Andersen
Gary Anderson
Gloria Anderson
John Anderson
Timothy Augst
Victor Auterio
John Baize
Clark Baker
James Baldwin
Kriegar Bangle
William Barker
Tina Bartlett
Catherine Barton
Rodney Barton
Edwin Batangan
Therese Bauerlein
Charlene Beasley
Linda Beck
Joann Beihl
Erik Belmont
Betty Bernstein
Steven Bishop
Ollie Bivins
Samuel Blanche
Lisa Bland
Karl Bloomberg
Michael Bockserman
Frank Bond
Kimberly Boone
Matthew Borland
Janis Brooks
David Brown
Lenora Brown
Lewis Brown
Lawrence Brugge
Jon Brumbach
Fred Bruner
James Brunke
Russell Bundy
Paul Burton
Brian Bygland
Brian Caldwell
Brad Campfield
Ross Cardilino
Steven Carlisle
Donna Carpenter
William Carrier
Margaret Carter
James Cashen

Elizabeth Cervantes
Michael Chambers
Wayne Chambers
Stephanie Chang
Tao-Yang Chao
Patricia Chapman
Wai Choy
Anthony Churchey
Louis Ciccolone
Michael Cimicata
Daniel Cohen
Ronnie Coleman
Jeffrey Coley
Billy Collins
Cecil Collins
Jerome Collins
Victor Colon
Michael Connor
Margaret Cooper
Gary Crane
Ronald Crawford
Richard Cross
Mark Crowe
Craig Cummins
Drucilla Curry
Catherine Curtis
Margaret Davis
Russel Davis
Shauna Dean
Marc Del Rio
Patrick Di Eugenio
Khang Diep
Carlene Dix
Esther Dorland
Timothy Dossett
Wilbert Draper
Bruce Drumm
Beverly Edwards
James Embry
John Emmerson
Patti Emunson
Joel Ericksen
Jack Evans
William Evans
Bruce Feller
Brian Ford
Jack Fowler
Neil Gallon
Julian Galloway
Celia Gamez
Henry Garcia
Victoria Garcia
Linda Giese
Roger Giles
James Gillis
Ernest Gilmer
Richard Gomez
Virgil Goodwin
Thomas Gordon
Robert Goslin
Sherre Granger
James Granger
Randy Gray
Michael Green
Kenneth Grossmann
Irene Grover
Daniel Hale
Richard Hand
Michael Hanley
Thomas Harmon
David Harrop
Mitchell Hatai

Thomas Heintzinger	Robert Kelly	Lynn Marshall	Alan Oakes	Joseph Scarce	Keith Timmins
Sherrie Henson	Deborah Kinsley	Jose Marti	Kenneth O'Connell	Timothy Schaeffer	Alan Todoroff
Thomas Hermann	Robert Knipfer	George Martin	Gerald O'Connor	Patricia Segura	Dale Torres
Richard Heuett	Richard Koenigstein	George Mason	Ronald Oelkers	Robin Selden	Felipe Torres
Kathleen Hicks	William Koepf	Larry Matney	Margo Ortega	Joseph Sepe	Jeff Tranberg
Roger Hillis	William Korb	Dale Matsubara	Patrick Ouellette	James Shannon	Erich Trefzger
William Ho	Lise Kramer	Lorenzo Matthews	Denzil Owen	Edward Shelbourn	Joel Trevino
Frederick Holloway	Steven Krause	Kerby Mayer	Eric Palmer	Diana Shorts	Thomas Trieschmann
Kathryn Holum	Paul Krueger	Jerry McCarroll	James Parker	Nicholas Silling	Jerold Twitty
Gerald Houck	Michael Lackey	Eugene McClain	Janet Parker	Eligio Silva	Yolanda Valdez
Ronald Householder	Dennis Lang	Robert McKay	Gary Parsons	Michael Simmons	John Vargo
Sally Howard	Maelou Larson	Gary Mejia	Mark Patla	Michael Slater	Michael Votaw
Marc Howell	Mark Larson	Javier Mercado	William Peterson	Mark Sletto	Robert Wagner
Bertelynn Hughes	Leon Lashley	Scott Michel	Vicki Pettigrew	Anthony Smith	Felix Walters
James Hughes	Yvette Lathan	Kurt Mihalik	Joe Phelps	Roger Smith	Joe Washington
Linda Humphrey	Teresa Lee	Randal Milberg	Bendee Pierce	Steven Snyder	Wesley Welk
Mark Humphrey	Steven Letter	David Miller	Michael Pisarkiewicz	Michael Spears	Peter Werner
Jack Hunter	Frederick Lewis	Bryan Mills	Clinton Porter	Stephen Spicknall	Stephen White
William Hunter	Roger Lewis	William Minor	Steven Rainville	William Stearn	Linda Whitney
Michael Impiombato	Michael Lieske	Donald Mitchell	Gary Ranck	Greg Stewart	Larry Whitt
David Ingram	Shi-Chao Lin	Robert Mohnkern	Henry Raynor	Gary Stone	Rick Williams
Robert Jacquez	Roderick Louie	Linda Molitor	Gregory Ready	Laura Sundell	Cynthia Wistrom
Hugh Johnson	Michael Lowery	Timothy Montgomery	George Reynolds	Robert Talder	Robert Withrow
Sherman Johnson	Gerard Lui-Kwan	David Moore	Clarissa Richardson	Stephen Tanaka	Renard Wolf
David Jones	Ellen Lutzow	Melvin Morgan	Donald Richardson	James Tanner	Jonathan Woodall
Eugene Jost	Jimmy Lyons	John Morretino	Brian Riker	Craig Tateishi	Donald Young
Joy Junghanel	William MacCorkell	Samuel Moser	Patricia Roberts	Billy Taylor	Frank Young
Frederick Kaczmarek	Barry Maddox	Trenetta Mosley	Reynaldo Robles	Douglas Teare	John Young
Sharon Kaku	Michael Maestri	Jan Murphy	Philmore Roff	Bart Tecca	Richard Young
Joseph Karahuta	William Makin	Steven Nafziger	David Romine	Mark Tefft	Thomas Zakrzewski
David Karelson	Randall Malkemus	Phéalox Nall	Joe Ruditis	William Tellam	
Sandra Karelson	Sheryl Manjarrez	Bich Nguyen	James Russell	Tina Thiry	
Charles Keane	Kelly Manny	Alan Noble	Edward Ryan	Clarence Thompson	
Billy Kearney	Kenneth Markham	Milton Noel	Shirley Sartain	Denise Thomson	
John Keeton	Robert Markin	Patrick Nohalty	Michael Sawyer	Kim Tilka	

RETIREMENTS:

The following employees retired in February from The Boeing Company.

Eric Anderson, 15 Years
 Richard Andrews, 32 Years
 Theodore Andrews, 38 Years
 Diane Austin, 9 Years
 Gail Barnes, 22 Years
 Gerard Barrieault, 21 Years
 Stanley Behnke, 25 Years
 Joan Behr, 17 Years
 Frank Benson, 24 Years
 Wilmajean Blank, 22 Years
 Wayne Brooks, 40 Years
 Connie Brownlee, 29 Years
 Linda Broyles, 16 Years
 James Brunsmann, 34 Years
 Linda Carlson, 17 Years
 Harry Carr, 26 Years
 Steven Chavez, 24 Years
 Cheng-Ho Chen, 38 Years
 Duska Cnossen, 29 Years
 Peter Comerio, 21 Years
 Katy Concepcion, 20 Years
 Larry Coppock, 20 Years
 Arthur Davenport, 19 Years
 Emmett Davis, 28 Years
 Bert Diangelo, 44 Years
 Robert Donahue, 7 Years
 Jack Dunham, 21 Years
 Dennis Duvall, 41 Years
 Gilbert Eastman, 20 Years
 Barbara Eckard, 22 Years
 Marvin Eiding, 21 Years

Judith Ferrer-Shifflet, 17 Years
 Judy Field, 37 Years
 Travis Findley, 43 Years
 Sharon Fitzpatrick, 12 Years
 William Flowers, 35 Years
 Raymond Foster, 8 Years
 James Franklin, 30 Years
 Robert Freeman, 28 Years
 Richard Gamble, 29 Years
 Carl Garlow, 19 Years
 Richard Gates, 5 Years
 Theodore Gates, 16 Years
 William Gibson, 32 Years
 Judith Gillespie, 38 Years
 Mary Gillum, 32 Years
 Robert Ginthner, 29 Years
 Donald Gleiter, 14 Years
 Robert Goudie, 30 Years
 David Graf, 27 Years
 Ronald Griffin, 21 Years
 Lavonne Gunderson, 29 Years
 Ursula Hammer, 5 Years
 Larry Hancock, 25 Years
 Cathy Hartmann, 28 Years
 Charles Harvey, 36 Years
 Gay Hawkins, 40 Years
 John Hejduk, 17 Years
 Raymond Held, 39 Years
 Pat Hickman, 10 Years
 Guy Hocking, 21 Years
 Michael Holt, 31 Years

Allen Horne, 29 Years
 Louis Hough, 40 Years
 Brian Houillon, 21 Years
 Sharon Hubbard, 30 Years
 Carl Hunter, 17 Years
 Charlene Jamison, 22 Years
 Neal Jensen, 8 Years
 Robert Jensen, 24 Years
 Dwayne Jones, 41 Years
 Allen Karlberg, 20 Years
 Nettie Kelley, 6 Years
 Kathleen Ketring, 30 Years
 Kara Kirk, 25 Years
 Robert Kirk, 33 Years
 Ernest Lamb, 21 Years
 Betty Lancaster, 21 Years
 Donald Lennebacker, 45 Years
 John Lester, 26 Years
 John Lewis, 29 Years
 Sidney Lewis, 27 Years
 Haulin Lim, 25 Years
 John Little, 37 Years
 Merlyn Longmire, 19 Years
 Rudolph Lopez, 27 Years
 Stanley Louie, 25 Years
 Terry Lyman, 32 Years
 Barbara Manzanara, 12 Years
 Bernard Marion, 19 Years
 Jeffrey Martens, 42 Years
 Thomas Marter, 21 Years
 Michael Massaro, 9 Years

George Matthews, 26 Years
 Charles McGinn, 32 Years
 Jerry Miller, 16 Years
 Stephen Miller, 29 Years
 Vicki Miller, 35 Years
 Jorge Mina, 25 Years
 Johnny Mizuno, 43 Years
 Charles Morgan, 26 Years
 Cecil Morris, 21 Years
 Stephen Mullins, 4 Years
 Ronald Murakami, 33 Years
 Jerri Murphy, 26 Years
 James Nail, 30 Years
 Roy Nelson, 16 Years
 Qui Nguyen, 21 Years
 Tan Nguyen, 19 Years
 Yoko Otsuka, 3 Years
 Margie Pallis, 23 Years
 Richard Parker, 16 Years
 Claude Perras, 23 Years
 Stephen Pettit, 27 Years
 Jack Porter, 41 Years
 Marlene Porter, 22 Years
 Kathryn Quinlisk, 22 Years
 Valerie Randall, 26 Years
 Isabell Reed, 18 Years
 Larry Rettig, 40 Years
 Diane Revell, 30 Years
 Rodney Richardson, 17 Years
 Valerie Rigdon, 35 Years
 Howard Rose, 20 Years
 Joyce Sais, 32 Years
 Dzung Sam, 19 Years
 Loretta Savee, 29 Years

Wenford Schurman, 25 Years
 James Shelton, 21 Years
 David Smith, 3 Years
 Stephen Smith, 33 Years
 Rodney Snow, 17 Years
 Ralph Sutton, 20 Years
 Leonard Tavernetti, 22 Years
 Robert Thompson, 41 Years
 James Thomson, 27 Years
 Romeo Tibayan, 26 Years
 Rodney Tillett, 28 Years
 Rosalie Todd, 38 Years
 James Treadway, 21 Years
 Sharon Tuggle, 28 Years
 Sammy Turner, 24 Years
 Richard Tuschinski, 39 Years
 Johnny Vaca, 44 Years
 Indra Valdnieks, 27 Years
 Barbara Vanells, 29 Years
 Donald Wade, 27 Years
 Richard Walton, 26 Years
 Judith West, 23 Years
 James Wheeler, 14 Years
 Onis Whitman, 11 Years
 Fai-Choi Wu, 29 Years
 Lyle Wulff, 44 Years
 Yasuko Yamamoto, 47 Years
 Trudy Yoshizumi, 18 Years
 Thomas Zawicki, 22 Years
 Gerald Zimmerman, 12 Years

IN MEMORIAM

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

Mary Bassinger, electric/electronic assembly & development; service date Sept. 25, 1978; died March 26

David Becker, product repair; service date April 22, 1996; died Feb. 27

Emma Biro, provisioning specialist; service date June 24, 1972; died Feb. 23

Mark Black, tool maker; service date July 31, 1978; died March 19

Gerald Brown, test and evaluation lab technician; service date July 18, 1988; died March 2

Jerrold Brown, technical data designer; service date Jan. 11, 1983; died Feb. 19

Patric Cascio, mechanical systems engineer; service date Aug. 19, 1972; died March 3

Robert Curley, systems engineer; service date Aug. 15, 1995; died March 11

Wanda Fleischman, technical designer; service date Aug. 7, 1981; died March 17

Shawn Hilgar, factory consumable handler; service date Sept. 25, 1985; died March 20

Debbie Holland, database administrator; service date Feb. 13, 1978; died March 20

Andrew Hooker, aircraft structure and surface mechanic; service date April 10, 1986; died Feb. 11

David Hoy, aerodynamics engineer; service date Feb. 7, 1978; died Feb. 10

John Kinsley, engineer/scientist; service date Sept. 30, 1988; died Feb. 15

Francine Kelly, office administrator; service date June 13, 1997; died Feb. 13

Kim Knight, employee development specialist; service date Aug. 19, 1985; died March 8

Michael Krallman, procurement quality specialist; service date June 14, 1993; died March 8

Muncy McPherson, procurement quality specialist; service date March 1, 1976; died March 7

Hollis Morrissey, systems engineer; service date Nov. 24, 2004; died Feb. 14

Keith Oliver, SHEA program management specialist; service date Feb. 8, 1988; died Feb. 21

John Partyka, composite fabricator; service date April 9, 1990; died March 25

Donald Rae, materials processing/requisition facilitator; service date Feb. 10, 1988; died Feb. 9

Richard Ramsey, integrated scheduling specialist; service date March 18, 1981; died Feb. 24

Brent Rule, lab technician; service date Oct. 10, 1997; died March 7

Edward Son, test and evaluation engineer; service date June 12, 1989; died Feb. 18

James Stiegel, Industrial Security specialist; service date Feb. 7, 2000; died March 13

Dan Suon, tube flaring & bead operator; service date Nov. 11, 1988; died March 7



The Boeing 787 Dreamliner plays a key role in Continental Airlines plans for international growth. Above is a 787 in Continental livery.

International ambitions

Continental sees 787, fleet renewal as keys to future growth plans

Continental Airlines' increase of its firm orders for the Boeing 787 Dreamliner reflects the carrier's interest in international expansion, according to a recent *Houston Chronicle* report.

Boeing and Continental said last month that the Houston-based airline ordered five 787-9 Dreamliners. That order boosted the number of 787s Continental has on firm order to 25. In addition, the carrier has contracted to convert 12 previously ordered 787-8 jetliners to 787-9s. The 787-9 can fly 300 miles farther than the 787-8 and can carry up to 290 passengers, compared to 250 for the 787-8.

These capabilities should help Continental's international-market aspirations. In a press release announcing the 787-9 order, Continental said the 787 is "the optimal aircraft to support Continental's strategy for continued international

growth." The carrier added that its 787s will let it target additional faraway markets, as well as offer more capacity on high-traffic international routes.

According to the *Chronicle* report, the airline wants to add more flights to locations such as Mumbai, India, and Shanghai, China.

"All the network carriers seem to have a similar outlook that the U.S. market is mature and there is not a lot of growth opportunity here," aviation consultant Alan Sbarra said in the *Chronicle* report. "They see a lot of growth opportunity internationally."

The 787 order continues Continental's efforts to renew its fleet, Continental said. According to the airline, Continental's mainline fleet—made up exclusively of Boeing airplanes—is the youngest among all U.S.-based network airlines, with an average aircraft age of less than 10 years. That's helped the airline reduce fuel consumption per revenue passenger mile by 34.1 percent in the last 10 years, Continental said.

Along with its 25 787s, Continental has 60 737s and two 777s on order, plus options for 82 additional 737 and 787 jetliners, the airline said. ■

CALENDAR OF EVENTS

To see this month's calendar of events, please visit http://www.boeing.com/news/frontiers/qt_ec.html on the Boeing Frontiers Web site.

Around a table at a group workshop during the recent Shared Services Group International Services meeting of international office business managers are Jen Tsao (from left), Joy Pu, Molly Han, Mike Duong and Koichi Nagao.

KEITH WOOD PHOTO

AROUND BOEING

SSG STRENGTHENS BOEING GLOBAL INFRASTRUCTURE

Flexible and responsive procurement options. Tighter financial controls. These are just some of the improvements at Boeing's international offices, and they were set in motion at a recent gathering hosted by Shared Services Group.

SSG service delivery leaders and more than 40 international office business managers met last month in Washington, D.C. Together, they advanced the realignment of SSG international offices and improved delivery of services to Boeing employees at non-U.S. sites.

Small-group gatherings helped implement changes in procurement, finance, staffing and relocation, and travel planning and accounting. The session created an international services advisory board and expanded site business continuity plans.

The improvements support the Boeing Internal Services Productivity company-wide growth and productivity initiative.

"By assisting our Boeing business partners at international sites," said SSG President Mary Armstrong, "we have a tremendous opportunity to improve Boeing productivity and enable growth."

"I feel we are poised to make maximum use of global knowledge and presence to

benefit Boeing business," said Laurette Koellner, president of Boeing International, who attended the session on March 15.

A robust global infrastructure, said Koellner, ensures that Boeing complies with non-U.S.-country laws, connects its industry teammates and provides essential services to its employees.

As an international aerospace enterprise, Boeing has manufacturing, development and investment interests around the world and sells its products to customers in more than 90 countries. Thousands of Boeing employees work in 70 countries.

MESA, ARIZ., SITE MARKS 25TH ANNIVERSARY

This year, 4,700 Boeing Rotorcraft Systems employees are celebrating the 25th anniversary of the Mesa, Ariz., site.

Since the site's 1982 groundbreaking, the desert landscape has evolved into 2 million square feet of production and office space and 25 buildings. Employees work on everything from AH-64D Apache Longbow helicopters to electrical subassemblies for programs across Boeing.

The U-shaped Apache assembly line at Mesa features a Lean Manufacturing process that earned the site the prestigious 2005 Shingo Prize for Excellence in Manufac-

turing. The site was recognized for reducing the lost-workday rate by 74 percent and manufacturing-cycle time by 40 percent.

"We are committed to maintaining a long-term presence in Arizona," said Mesa site leader Obie Jones. "Ongoing programs and opportunities all will help ensure we remain a vital part of the Arizona landscape that employees have helped shape and transform." ■



BOEING GRAPHIC

The Boeing site in Mesa, Ariz., is celebrating its 25th anniversary this year. Mesa is the home of the AH-64D Apache Longbow helicopter, whose customers include Greece. Above is a photo rendering of an AH-64D for the Hellenic Army in Greece.



GAIL HANUSA PHOTO

Boeing Structures Laboratories and Test Manufacturing Team

For the past several months, we've been converting the south bay of the 40-23 building at the Boeing site in Everett, Wash., into a test facility for conducting the 787 full-scale static test. But now the time has come to lift the 208-foot-wide (63.4 meters), open-span, 1 million-pound (453.6 metric tons) superstructure to an elevation of 25 feet (7.6 meters).

How do we safely lift something this large?

We've employed an industry best practice for steel erection called the "heavy lift procedure." This lets us assemble the superstructure on the ground rather than 60 to 80 feet (18 to 24 meters) in the air, as is typical of traditional methods. Hydraulic-strand jacks then pick up the superstructure using the structure's own support columns. By using the "heavy lift procedure," we've aligned our development of improved testing methods with the companywide Lean+ growth and productivity initiative.

Scheduling for test-hardware installation was designed to coincide with a sequence of lift stages, allowing that work to be accomplished close to the ground and minimizing crane and snorkel lift requirements. Not only do we realize schedule benefits from this procedure, but we provide a personnel-safety benefit as well.

For past airframe tests, the structure was essentially built around an already delivered airplane. Due to the aggressive test schedule of the 787, we will be able to complete the static test setup and begin systems checkout prior to delivery of the airframe. This plan reduces the time between delivery of the 787 static test airframe and application of the first test condition, which is the only way for us to achieve schedule milestones that were established more than three years ago. A subsequent full-scale fatigue test will use the same techniques, as will future test programs.

The 787 full-scale static test is scheduled to start later this year with completion in mid-2008.

A man in a blue t-shirt and dark pants is kneeling on a tiled floor in an art studio, painting a large canvas. He is using a brush to apply a thick stroke of orange paint. The studio is filled with various canvases and art supplies. The lighting is dramatic, with strong shadows and highlights. The text "IN THE ARTS, WE FIND OUR WINGS." is overlaid on the image.

IN THE ARTS, WE FIND OUR WINGS.

 **BOEING**

This ad, the sixth in a new series from the company's portfolio of community ads, reinforces Boeing's support of the arts, which help enrich and enlighten the lives of people worldwide. These ads are published in support of arts-related events.



BOEING AND THE FEARLESS OF FARNBOROUGH.

Good partnerships can lead to great things. In that spirit, Boeing and QinetiQ are testing cutting-edge aerodynamic designs that will allow the new 787 to use 20% less fuel, produce 20% fewer carbon dioxide emissions and to fly 60% quieter than ever before. Proof that good partnerships are good for us all.

 **BOEING**

boeing.co.uk

This is the eighth in a series of new ads created to build awareness of Boeing and its many partnerships in the United Kingdom. Boeing, the largest overseas customer of the UK aerospace industry, currently partners with more than 300 businesses and universities around the country. The advertising campaign has appeared in The Sunday Times, The Economist, The Daily Telegraph and other UK publications, and complements current Boeing business and communications activities in that nation.