BOEING

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Frontiers

WHO WE ARE

A special photo feature on the people of Boeing

PHOTO: MONICA WEHRI | BOEING

PHOTO: BOB FERGUSON | BOEING

TABLE OF CONTENTS

07 **LEADERSHIP MESSAGE**

08 **SNAPSHOT**

09 **QUOTABLES**

10 **WHAT WE DO**

12 **HISTORICAL PERSPECTIVE**
Historic Hangar 1 at Boeing Field, which today is home to Boeing Test & Evaluation's fleet of chase planes, left, was built for the Flying Fortress School that trained thousands of U.S. Army Air Force bomber mechanics during World War II.

16 **NEIGHBORS AND PARTNERS**
Canada has been a major customer and partner with Boeing since 1919 when Bill Boeing and pilot Eddie Hubbard flew mail from Vancouver, British Columbia, to Seattle, the first international airmail to reach the United States.

22 **FACE OF PRIDE** ➤
Over the past year, *Frontiers* photo editor and photographer Bob Ferguson visited a number of Boeing sites on a special project for the magazine—to capture through the lens of his camera the dignity and spirit of accomplishment of Boeing employees at work. Ferguson could not visit every Boeing site, but the employees featured represent the nearly 170,000 men and women around the world who all are helping make a better Boeing by doing what they do best—with pride.

68 **CUSTOMER PROFILE**

69 **MILESTONES**

Cover: Theary Kov, a mechanic for 777 Final Assembly, seals a door in Everett, Wash. **BOB FERGUSON | BOEING**

Photo: Flight Test Crew Chief Mario Caraballo of the H-47 program checks a flight plan at the Boeing site in Ridley Township, Pa. **BOB FERGUSON | BOEING**


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ADVERTISEMENTS

The stories behind the ads in this issue.

This ad highlights an innovation summit held in Abu Dhabi, United Arab Emirates, in November. Senior Boeing executives and other global business leaders attended, and content from the summit can be viewed at www.theatlantic.com/whatsnext. Translated the text reads: “Innovating together. ‘What’s Next? Navigating Global Challenges with the Innovation Generation’—the global innovation summit brought to Abu Dhabi and the world by *The Atlantic*. Proudly sponsored by Boeing.”

Derived from a collection of posters in support of Boeing’s Build a Better Planet environmental strategy, this ad illustrates the company’s global collaboration to improve environmental performance. For more information visit www.boeing.com/environment.

Adapted from a series of posters recognizing Boeing employees who are achieving quality improvements, this ad is one of more than 50 representing employee engagement teams across Commercial Airplanes. The teams posed and created taglines for their posters. A gallery of the posters can be found on the Boeing intranet at http://programs.ca.boeing.com/quality/new/order_posters.shtm.

This ad features the jet snowflake and Custom Hangar collections from the Boeing Store. The jet snowflake, an original Boeing design, is perennially popular among aviation fans and employees. The Custom Hangar is a collection of authentic aviation artifacts exclusive to the Boeing Store.

IAM PROMOTIONS

No promotions listed for periods ending Oct. 31 and Nov. 7, 14, 21 and 28.

FSC LOGO

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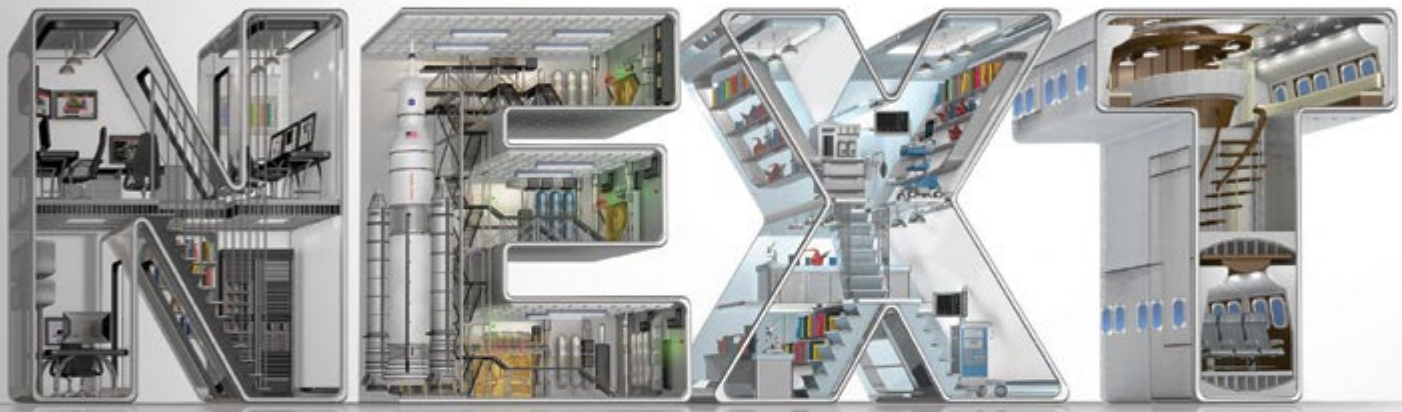
WHAT'S NEXT?
Navigating Global Challenges with the Innovation Generation

The Atlantic



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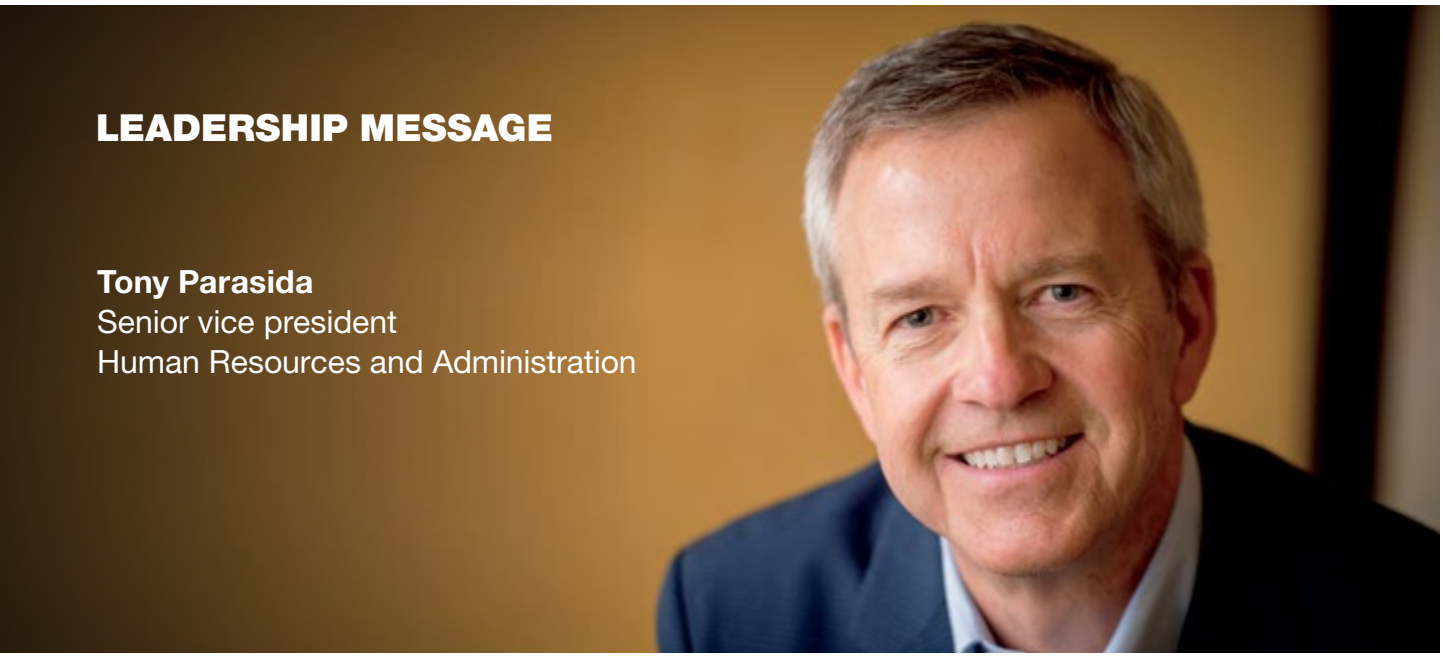


LEADERSHIP MESSAGE

Tony Parasida
Senior vice president
Human Resources and Administration

The people of Boeing

Boeing's success depends on attracting, retaining and engaging the company's most vital resource—its people

I was 17 years old when I saw Boeing's magnificent 747 for the first time, at the airport in my hometown of Pittsburgh. Instantly capturing my imagination, the iconic "Queen of the Skies" forever changed the face of air travel and sparked in me what has become a lifelong passion for aerospace. And it was made possible by one thing—Boeing people.

This special issue of *Frontiers* is devoted to a remarkable collection of photos of employees from around the company. They capture the spirit of accomplishment Boeing people have in helping produce the best aerospace products in the world. Seeing these powerful images of the diverse men and women of Boeing underscores for me the importance of people and, as the leader of Human Resources, of the role HR plays in helping you, and our company, thrive.

This is something I have a unique perspective on as both an engineer and a former business unit leader within Boeing Defense, Space & Security. I've experienced the challenges of bringing all the right players to the table to work a technical solution that meets our customers' needs, the pressure to grow the business while decreasing costs, and the significance of front-line managers' roles, as they sort through all of their daily management duties while providing the leadership that helps Boeing's people grow and thrive.

As competitive and financial pressures on our customers intensify, they demand more from us—more capability, efficiency, quality and reliability in our products and services—and, in turn, more from our people. That's why the business of attracting, retaining and engaging some of the most creative minds in the industry is critical to Boeing's second century of success.

We are setting higher standards for ourselves to transform HR into a best-in-class function from both a company and employee perspective. I think of HR as a force multiplier; the stronger our HR team is, the stronger our employees, and therefore our company, will be. We're starting from within to ensure that you are working with the best talent in the field with the right combination of education and experience, people who lead by example and promote excellence among their peers.

As the businesses evolve to meet new objectives, we are working side by side with them to develop approaches that help maintain and grow competitive advantage. HR is focused on ensuring we provide the resources we need to be successful and to attract and retain talent. These include:

- Providing market-leading benefits that focus on health and financial well-being
- Revamping our curriculum at the Boeing Leadership Center to develop our next generation of leaders
- Working proactively with our unions to provide long-term agreements that stabilize our business for years to come

And as we face into the changing demographics of our workforce, we're focusing on everything from knowledge transfer to career development to strong relationships with key universities and technical schools.

By putting our focus on speed, quality and simplicity in everything we do, we want to be your partner in driving success at Boeing for the next century and beyond.

Forty years ago, I was inspired by a single Boeing product. Today, I am inspired by you—the more than 168,000 Boeing people across the United States and in more than 65 countries. You all exemplify why we are here. Take a look at the photos of your colleagues, and I believe you, too, will be inspired. ■

PHOTO: BOB FERGUSON | BOEING

SNAPSHOT

North star

An Air Canada 787-8 Dreamliner flies over the Washington state coast near Olympic National Park, photographed from a Learjet by Brian Losito, Air Canada's official photographer. The airline took delivery of its first 787 earlier this year, part of an order for 37 Dreamliners including 15 787-8s and 22 787-9s. **PHOTO: BRIAN LOSITO | AIR CANADA**

QUOTABLE

"They just got every single little detail right … I mean everything is just brilliant."

—British entrepreneur Richard Branson, who founded Virgin Atlantic, talking about Boeing and the airline's first Dreamliner, a 787-9. (For more on Virgin Atlantic and the 787, see Page 68.) *USA Today*, Oct. 30

"The road to Mars and asteroids begins right here at Michoud."

—NASA Administrator Charles Bolden during a visit to the space agency's Michoud Assembly Facility near New Orleans, where Boeing is building the core stage of the massive Space Launch System rocket that will carry humans into deep space, perhaps one day to Mars. *AmericaSpace*, Oct. 19

Common ground

For this employee, helping resolve disputes and conflicts started early

BY TERRI CONRARDY, AS TOLD TO LEN VRANIAK

Terri Conrardy is a case manager in Renton, Wash., with Alternative Dispute Resolution, part of Human Resources. In this *Frontiers* series that profiles employees talking about what they do at Boeing, Conrardy explains how she helps nonunion employees and managers resolve conflicts.

I grew up the oldest of nine children and often found myself mediating arguments between my siblings. So I'm not really surprised that I ended up in this role at Boeing.

But it took me a while to translate those childhood experiences into my career. After spending a number of years in various Human Resources positions, I decided to invest my energy and time to obtain a degree in Organizational Management through the Learning Together Program. I love learning, so I also took a Basic Skills Mediation course through the University of Washington Law School Continuing Education program. With these new skills, I watched for an opportunity to use them. I was fortunate to be selected for my position in June 2005.

When people ask me what I do, I tell them to imagine being an employee who has a dispute with their manager. Whether it's a performance review they feel is inaccurate, a Corrective Action they view as overly severe, or a changed work package that appears to be retaliatory, people want perceived wrongs to be made right.

And I'm part of the HR team that is there to help.

The funny thing is that I used my mediation skills on my own children when they were teenagers. When they argued, I would say, "OK—we are taking this issue to mediation. Prepare your statements."

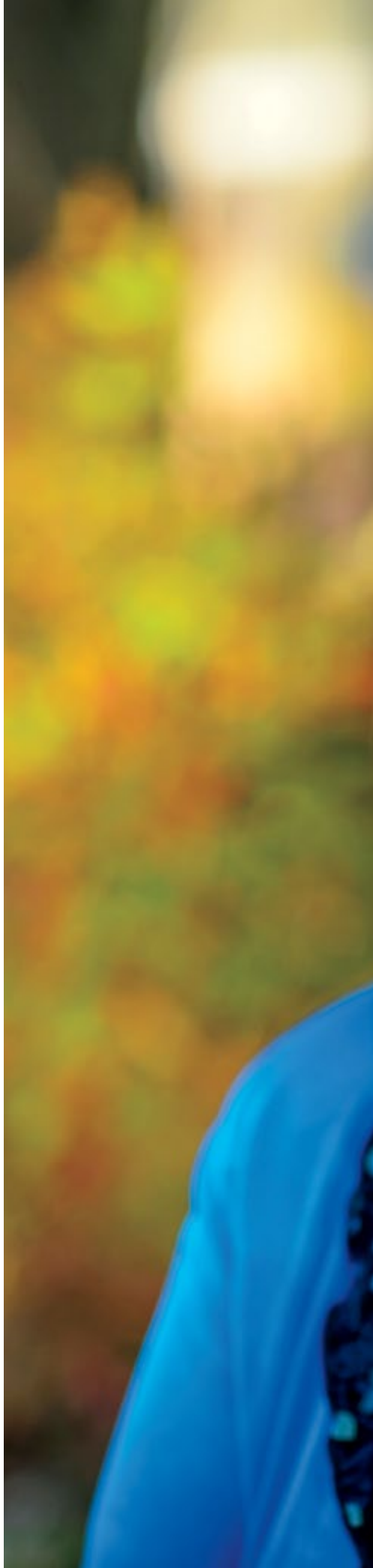
My kids' disputes were about different things than those I see at work, but the process of reaching a solution is pretty similar. All parties need to speak and be heard in a respectful way, and they need to collaborate on the solution. Our team provides employees with the resources and tools to communicate successfully. When they apply these tools to reach an agreement on their own, they can move on to focus 100 percent on their job responsibilities.

I feel I have one of the best jobs in the company. As a case manager I am a neutral party who is there to help and coach people so they can achieve a suitable resolution for all. I get to help people move beyond issues they often think aren't solvable.

When managers and employees are able to own their mistakes and communicate that, they help create an open and honest culture. That improves the relationship between employee and manager, leads to improved productivity, and increases morale.

And for me, helping make that possible is the best part of my job. ■

LEN.VRANIAK@BOEING.COM



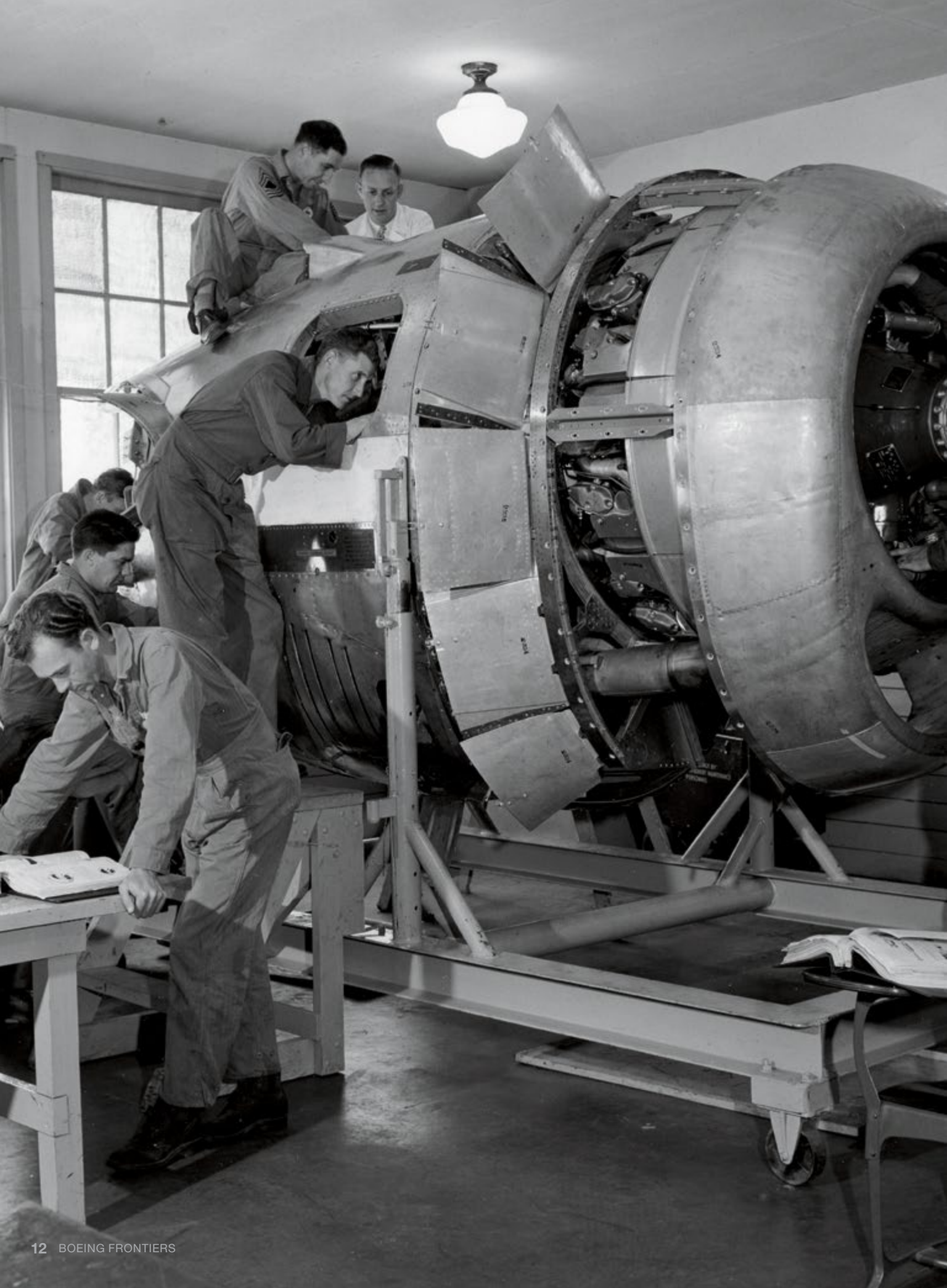
Terri Conrardy

HAS WORKED FOR BOEING:
20 years

TEAM:
Alternative Dispute Resolution

HAS BEEN PART OF THE TEAM:
9 years

PHOTO: MARIAN LOCKHART | BOEING



Bomber school

During WWII, Boeing trained thousands of mechanics

BY MICHAEL J. LOMBARDI

The story of how Boeing overcame the awesome challenge of increasing production rates after America's entry into World War II—from a handful of airplanes a month to hundreds—is well-known. But another emergency task handed to the company at that time is one largely lost in history.

On Feb. 19, 1942, just two and half months after the attack on Pearl Harbor, Gen. Walter Reed Weaver, acting chief of the U.S. Army Air Force, contacted Boeing President Phil Johnson. Wrote Weaver in his letter to Johnson: "Fifty enlisted men will be sent to your factory at the earliest predictable date to pursue a four-week course of familiarization of airplanes built by you."

Boeing's assignment: Create a training school for Army Air Force mechanics.

What began as a command from an Air Force general within a matter of months grew into a school complete with hangars, barracks and its own airplanes. Boeing leaders from various organizations worked together quickly to create a training program. A curriculum was built around existing Boeing Field Service B-17 customer training, and classrooms for students were set up at a Boeing office in downtown Seattle.

Everything appeared to be manageable—until those 50 students turned out to be 500.

To accommodate that many students, Boeing worked with the city to house them at Seattle's Civic Auditorium, which today is the city's opera house, known as McCaw Hall. Students were bused to Boeing Field for training that, due to the numbers, consisted of spending time touring the B-17 production line.

Those tours were not adequate, so Boeing's motion picture department developed a number of training films, and the field service department developed training mock-ups that consisted of actual parts and systems mounted on plywood boards—an innovative concept that became popular throughout the aviation industry.

Soon, a training program was in place that, while somewhat cumbersome, was economic and viable. On April 23, 1942, it earned an official name: the Flying Fortress School, named after the B-17 that Boeing was producing.

Douglas and North American, which later became Boeing heritage companies, were developing similar schools in California, and in early May, Army Air Force Commanding Gen. Henry "Hap" Arnold instructed all manufacturers to provide housing as well as classrooms for the airmen. Following that directive, Boeing committed half a million dollars to constructing and equipping the school, located at the north end of Boeing Field. It included barracks, three hangars, classrooms, a dispensary and a theater. Construction and management of the school progressed on verbal requests from the government—there was no contract until November 1942.

Along with the basic necessities of the school, Boeing added another innovative training aid: a two-story blockhouse with a pair of B-17 wings attached so that the mechanics could go through their actual daily maintenance routine. This test rig was called "Joe's Duck," and later a B-29 test rig called the "Unknown Angel" replaced it. The school also had its own fleet of 14 flying B-17s and B-29s to assist with hands-on training.

In February 1943, the school began to run classes day and night with the addition of B-29 training. In 1944, when Boeing changed its production over to B-29s, the Flying Fortress classes were moved to Lockheed Vega in California, where production of B-17s continued. The Boeing school then became the Superfortress School.

The Boeing school continued until the war ended. It closed in October 1945. By then Boeing had trained 30,000 mechanics and flight engineers as well as pilots and navigators on how to maintain Boeing bombers. In 1947, the school barracks were taken over by the National Guard and Boeing retained the three hangars and a school building. It became the Boeing Stratocruiser School, which offered maintenance training on the Model 377 Stratocruiser to airline personnel.

One building that was part of the original Flying Fortress School remains and is still in use—historic "Hangar 1." Originally built to house a B-29 Superfortress, it recently was restored and now is home to the Boeing Test & Evaluation's fleet of chase planes.

Today, Boeing's Commercial Aviation Services and Global Services & Support organizations continue the legacy of customer responsiveness and support exhibited by their predecessors in Boeing Field Service and Boeing Training during that time of national emergency 70 years ago. ■

MICHAEL.J.LOMBARDI@BOEING.COM

Photo: U.S. Air Force mechanics study a B-29's R-3350 engine at the Boeing Superfortress School. **BOEING ARCHIVES**

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NORTHERN

Canada and Boeing have enjoyed a long and productive journey together

BY ERIC FETTERS-WALP

As a team of engineers carefully examined a newly produced composite barrel at the Boeing Canada Winnipeg plant, Kyle Advent talked about this airplane part's importance to the Fabrication site in Manitoba.

"This is a pretty big project for us. It's another step up from what we've traditionally done here," said Advent, a manufacturing engineer at the site. The prototype he and the other engineers were perfecting is the acoustic inner barrel—part of the airplane's engine nacelle—for the 737 MAX.

With more than 2,400 orders for the 737 MAX, this new part adds to the already significant fabrication work performed at the Winnipeg site, including for the 787 Dreamliner. To handle it and other work, Boeing is adding 150,000 square feet (13,900 square meters) to the main production building.

"It's a great sign to see expansion. It means Boeing trusts us to continue making parts and developing new ones," said Aneta Zacharias, an industrial engineering specialist in Winnipeg.

Boeing has a long history of doing business with and within Canada, dating back to 1919 when Bill Boeing and pilot Eddie Hubbard flew mail from Vancouver, British Columbia, to Seattle—the first international airmail to reach the United States. Since then, Canada has been a major customer and partner with Boeing. The company also directly employs about 2,000 Canadians, including over 1,600 in Winnipeg, and thousands more work for Boeing suppliers. Canada and the U.S. are strong allies, sharing the world's longest common border, and the

Photos: (Above) Layup technicians Derek Rebec, left, and Jerlyn Melo prepare a 737 forward strut for layup. (Right) Christos Papagiannopoulos, assembly technician, prepares a completed 787 landing gear door—the largest single part made at the Fabrication plant in Winnipeg—to be lifted into a shipping container. **BOB FERGUSON | BOEING**


EXPOSURE

Canada at a Glance

AREA:
3,855,103 square miles
9,984,670 square kilometers

ESTIMATED POPULATION, 2014:
34.8 million

ESTIMATED GROSS DOMESTIC PRODUCT, 2013:
$1.5 trillion (U.S.), ranked 14th worldwide

SOURCES: GOVERNMENT OF CANADA, U.S. GOVERNMENT

Canadian armed forces rely on numerous Boeing aircraft and defense products.

"Canada is a strong military partner with NATO and the U.S., and the nation has repeatedly trusted Boeing to supply it with the advanced capabilities necessary to satisfy Canada's diverse defense and humanitarian mission sets," said Roberto Valla, regional director, Americas, International Business Development for Boeing Defense, Space & Security. "Canadian aerospace companies also play a critical role in helping build and support Boeing Defense, Space & Security products."

In addition to the Commercial Airplanes Fabrication facility in Winnipeg, Boeing's presence in Canada includes offices stretching from Montreal to Vancouver. Boeing subsidiary Jeppesen, which provides crew management and logistics software, has an office in Montreal. Subsidiary Aviall, the world's largest diversified aircraft parts distributor, also has a site in Montreal and five other Canadian cities. AeroInfo Systems, part of Boeing's Commercial Aviation Services business, has more than 200 employees in the Vancouver suburb of Richmond. The business is a key contributor to Boeing products and services, including the 787 GoldCare support program and Maintenance Performance Toolbox. AeroInfo's Defence & Government Services group supports Boeing defense programs in Canada.

"In Canada, you have a complete cross section of The Boeing Company and what we do," said Shep Hill, president of Boeing International and senior vice president of Business Development and Strategy. "It's a great example of our international expansion, our global strategy and our desire to be part of the fabric of the countries in which we do business."

Boeing generates more than $1 billion in annual economic activity in Canada, Hill noted. Under the Canadian government's Industrial and Technological Benefits program, Boeing's work with companies in Canada has generated more than $4.5 billion in business the past few years. Only the U.S. and Australia have more Boeing employees than Canada.

And Canadian airlines are significant Boeing customers.

Air Canada has ordered 61 MAX airplanes, while WestJet has ordered 65. As of early November, Air Canada also has taken delivery of its first five of 37 787 Dreamliners it has on order. And WestJet's all-Boeing fleet now includes more than 100 Next-Generation 737s. WestJet, Air Canada and Air Canada's low-fare carrier Rouge also fly 767 models, and Air Canada operates the 777-200LR (Longer Range) and 777-300ER (Extended Range) models for long-haul routes. Several smaller Canadian airlines, freight and charter carriers operate Boeing airplanes as well.

As home to the majority of Boeing Canada employees, Winnipeg also is the company's oldest site in the nation, having started in 1971 as an industrial participation investment in Canada. At first, the site manufactured various glass-fiber panels and interior components for Boeing's airplanes, including the 707 and 727. During slower times in the commercial aviation industry, the factory produced acrylic bathtubs and military target systems.

Today, the site is an "absolutely integral part of the production process within Commercial Airplanes," Hill said. In total, the Winnipeg site is responsible for producing nearly 1,000 different composite parts and assemblies for all of Boeing's current commercial airplane models, including wing-to-body fairings, engine strut fairings and landing gear doors. As a direct supplier for the 787 Dreamliner, the site is responsible for the design and manufacturing of wing-to-body fairings and main landing gear doors for that model.

"Over our history, we have progressed from building pretty simple components into some of the toughest things Boeing makes," said Rick Jensen, the site's director of Communications, Community and

Photo: Layup technician Minerva Cenidoza, foreground, lays up a 737 forward fairing part. **BOB FERGUSON | BOEING**

Boeing has helped Canada modernize its military forces—and is looking to the future

Royal Canadian Air Force pilots have flown the CF-18 Hornet for more than 30 years, and Boeing hopes it can produce the next generation of jet fighters for the nation's military.

The company wants to have the F/A-18E/F Super Hornet in consideration for Canada's fighter replacement program. That campaign follows a number of major contracts to modernize the nation's defense forces in recent years.

The Canadian military also operates Boeing's C-17 Globemaster III and the CH-147 Chinook.

"We're providing the Canadian forces with some tremendous products, services and support," said Jim Barnes, director of Business Development in Canada for Boeing Defense, Space & Security.

Barnes works in Ottawa, Ontario, where the company's recently expanded office oversees the execution and program leadership of Boeing's long-term support program for Canada's 15 new CH-147F Chinook helicopters. The last rotorcraft in that contract was delivered in July. The site also serves as the Canada Business Development office for Defense, Space & Security, and it allows Boeing officials to talk often with Ministry of Defence representatives and others within the Canadian government, as well as current and potential industry partners.

"Being here in front of the decision-makers, being able to walk down to their offices, has been very beneficial in pushing our efforts forward," Barnes said.

Over the past decade, Boeing has played a large role in bringing Canadian forces into the 21st century. In January 2014, Boeing completed a digital electronic warfare system upgrade to 77 of the country's CF-18 jet fighters. In 2007 and 2008, Boeing delivered four C-17 Globemaster III airlifters, designated the CC-177 in Canada. They since have been used for military and humanitarian missions around the globe.

Canada's army is a customer of Boeing subsidiary Insitu, which has provided ScanEagle unmanned aircraft system services. That initial 2008 contract has been extended to include the installation of unmanned aircraft capabilities on Royal Canadian Navy vessels. Boeing also has provided the Canadian navy's all-weather Harpoon missiles.

Many of Boeing's major defense programs rely on a network of suppliers in Canada, and Canadian industry directly contributes to support contracts to maintain the mission-ready capability of the CF-18, CC-177 and CH-147.

In addition to vying to replace the CF-18 with the advanced Super Hornet, Boeing sees other potential military contracts in Canada, according to Barnes. Substantial opportunities for Defense, Space & Security exist in other nontraditional markets, including energy, remote area logistics and information technology, Barnes noted.

"We're chasing opportunities across all divisions," he said, "including cybersecurity, secure communications and energy." ■

Government Relations. "We were doing carbon fiber structural work long before most places were, and we're now the largest aerospace composite manufacturer in Canada."

Work on components for the 787 accounts for 45 percent of the site's work, Jensen said. But with production rate increases for the Next-Generation 737 and 777, all of the site's teams are busier than ever, said Marty Lehman, director of Manufacturing and Environment, Health & Safety at the Winnipeg site. Part of his job is to make sure the site keeps up with production-rate demand without any slip in safety procedures, which has been a challenge, he said. He also is focused on improving the site's Lean+ manufacturing, an area in which Winnipeg has excelled, winning the company's Fred Mitchell award for its high Lean+ scores four times in recent years.

"The Lean drive up here in Winnipeg is strong," said Carl Cline, a manufacturing manager for the factory's Process Center, which supports programs across the site. He and other employees point out that work done in Winnipeg means there are numerous opportunities to learn new skills.

"With the variety of work in here, there's always a challenge," said Tom Donato, who helps to build 737 environmental control system doors. His line now produces more than 80 such doors a month to keep up

"In Canada, you have a complete cross section of The Boeing Company and what we do."

—Shep Hill, president of Boeing International and senior vice president of Business Development and Strategy

with increasing 737 production rates.

"I like the fact you can work at one site but move around to a lot of different jobs," said Dexter Magri, a manufacturing manager for 777 ducts and doors.

The Winnipeg site's opportunities extend to those who are deaf. A larger-than-average proportion of the site's employees are deaf or otherwise hearing-impaired, Jensen said. Accommodations include strobe lighting to warn of passing forklifts, as well as American Sign Language interpreters and closed captioning on training videos.

While Boeing Canada contributes to leading-edge composite manufacturing within the company, it also is supporting the advancement of the nation's aerospace technology. More than a decade ago, Boeing Canada helped launch the Composites Innovation Centre in Winnipeg, a not-for-profit composite materials research organization. Through the center, Boeing also has supported the Canadian Composites Manufacturing Research and Development consortium, a group of Canadian industrial and research organizations working to further advance composite manufacturing processes. Additionally, Boeing is the founding industrial member of the University of British Columbia's Composites Research Network.

Boeing Canada's partnerships extend to corporate citizenship as well, with Boeing Winnipeg and AeroInfo in Richmond specifically contributing to a number of organizations in their communities. Boeing Winnipeg's partners include the United Way of Winnipeg and Siloam Mission, which offers employment training to help the less fortunate and homeless move off the streets. In the arts and culture realm, Boeing Canada supports a number of arts and performing arts programs for children, as well as science education programs.

Back on the floor in the Winnipeg Fabrication building, the team working on the first 737 MAX inner barrel pores over details as it collaborates with other composite experts in Washington and South Carolina to build the first production parts. The new nacelle component is designed to be one seamless piece, which will improve its noise-reduction qualities and performance.

"This is a learning curve, but we're learning a lot from this first prototype," said Leila Dimacali, a plastics technician. Brian Korchak, also a technician, said production of the barrel will involve robotics, another first for the site.

Zacharias, the industrial engineering specialist working on the 737 MAX team, said she knows there are a limited number of places in the world where this work is being done. She said she's pleased that Boeing has a strong, and growing, presence in Canada.

"I wanted to stay local," said Zacharias, who came to Boeing right after graduating from the University of Manitoba. "It's a great opportunity to work for such a world-renowned company while being able to stay here in Winnipeg." ■

ERIC.C.FETTERS-WALP@BOEING.COM

Photos: (Far left) A CF-18 Hornet escorts a C-17 Globemaster III, designated the CC-177 in Canada. **DND-MDN CANADA** (Above) Aneta Zacharias, an industrial engineering specialist in Winnipeg, is helping set up the site's production process for the 737 MAX acoustic inner barrel. **BOB FERGUSON | BOEING**

OUR BOEING

Regardless of where they work or what they do, whether in an office or a factory, in the field or in the sky, Boeing employees take great pride in doing their jobs. And it shows.

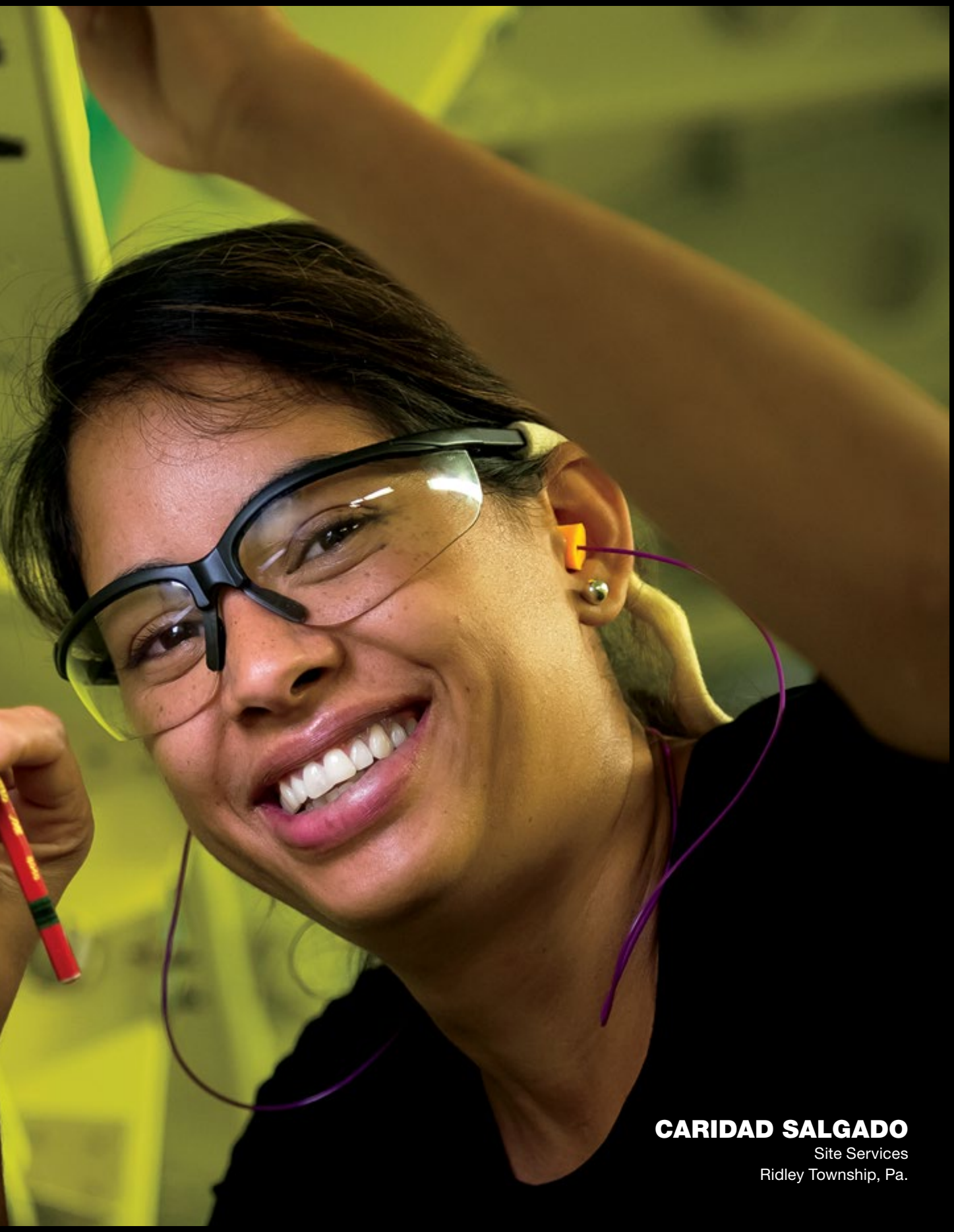
BY BOB FERGUSON

JEROMY OLIVER
Fabrication specialist
Interiors Responsibility Center
North Charleston, S.C.

DAVID RENTERIA
Production integration
Apache Operations
Mesa, Ariz.

KRISTIE KASSEM
Industrial engineer
Electronic & Information Solutions
Huntington Beach, Calif.

STEVEN GALL
Electrical engineer and Payload & Sensors
Development lead
Huntington Beach, Calif.



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Site Services
Ridley Township, Pa.

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Mission Control Center
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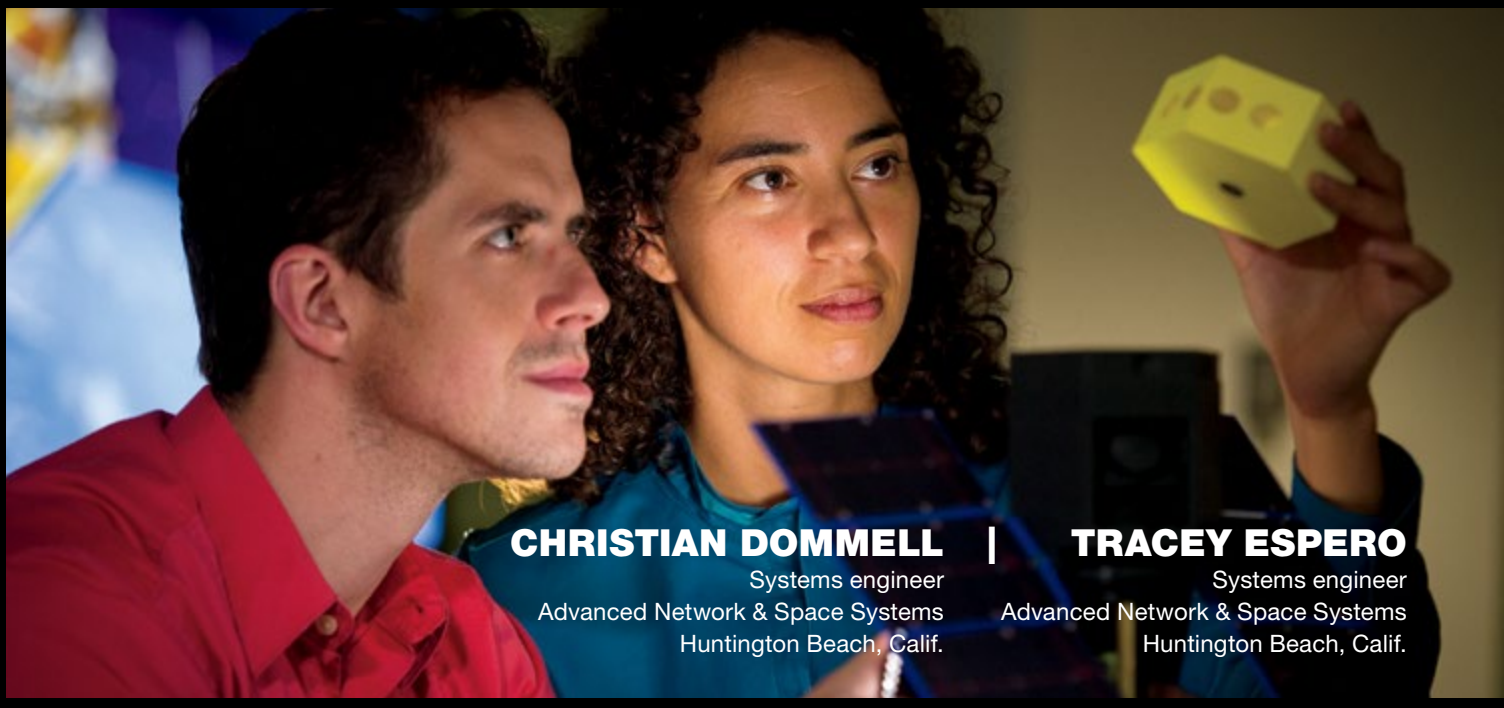

CHRISTIAN DOMMELL
Systems engineer
Advanced Network & Space Systems
Huntington Beach, Calif.

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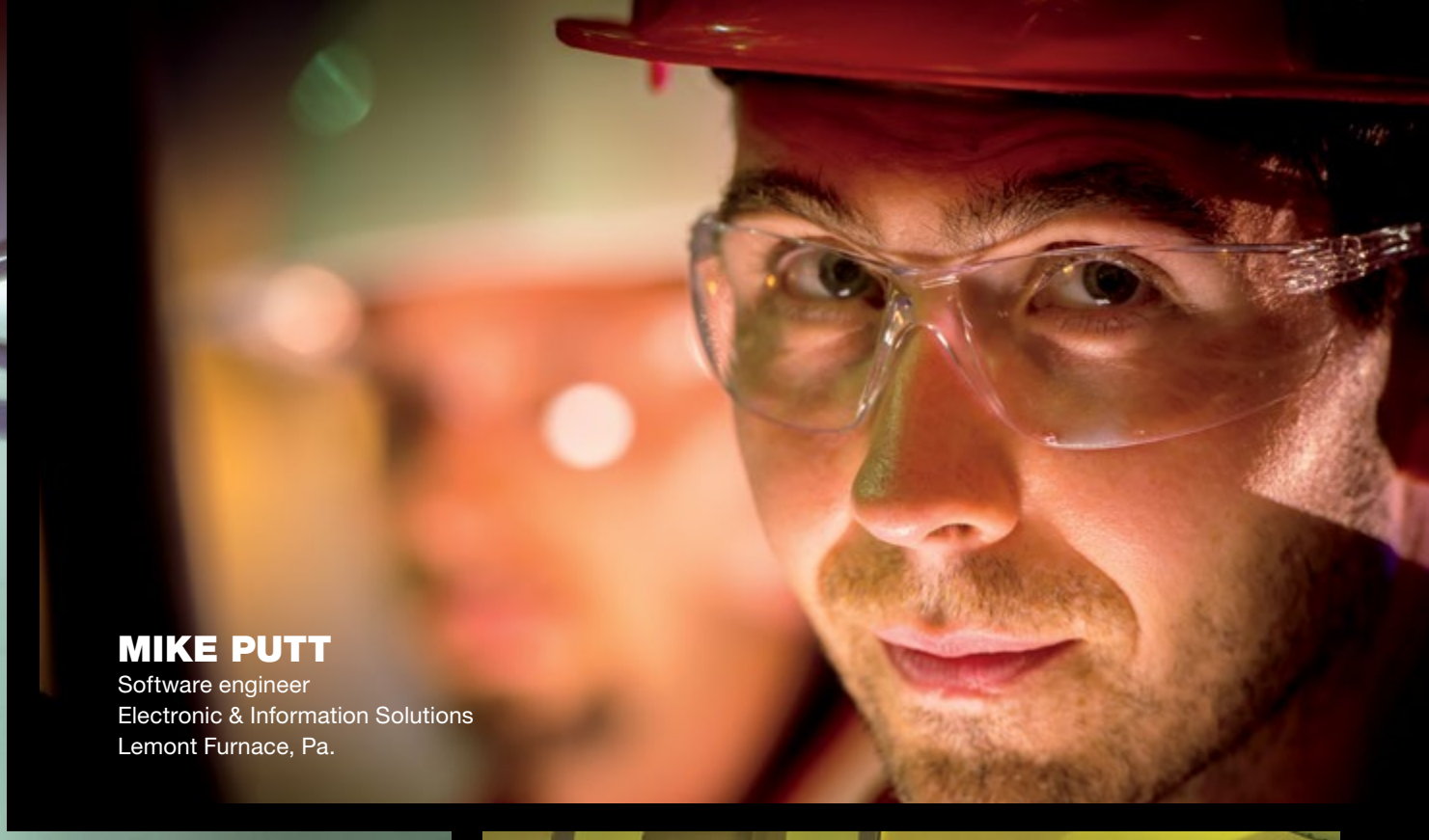

MIKE PUTT
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Electronic & Information Solutions
Lemont Furnace, Pa.

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Aircraft technician
H-47 program
Ridley Township, Pa.

DARRELL CHINCHILLA
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777 Ram Air Ducts and
Landing Gear Doors
Winnipeg, Canada

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Quality and Manufacturing
Mesa, Ariz.

GERALD MILLER
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747 Final Assembly
Everett, Wash.

ROXANN HIRST
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787 Services Monitoring and Reliability
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ARLENE MOORE
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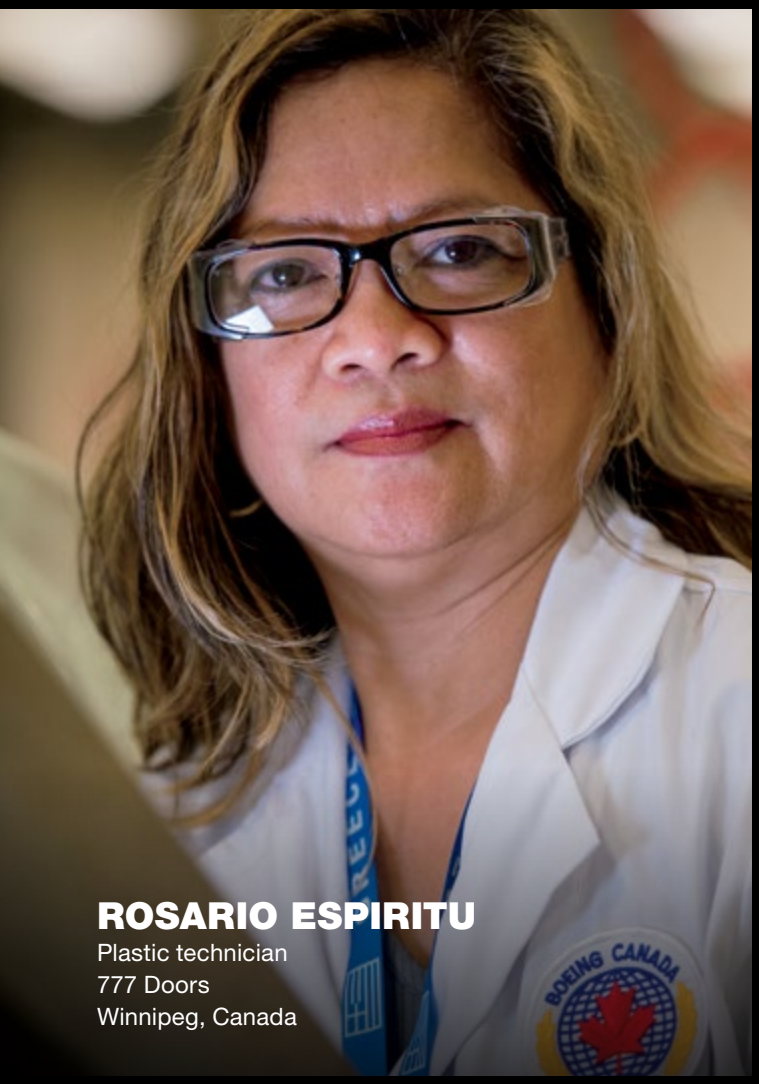
F/A-18E/F and EA-18G programs
St. Louis

DAVID HUNTER
Assembly installer
737 program
Renton, Wash.

DARCEL HAMMOND
Sheet metal assembler
H-47 program
Ridley Township, Pa.



ROSARIO ESPIRITU
Plastic technician
777 Doors
Winnipeg, Canada

NOAH VILLARREAL
Structure mechanic
777 program
Everett, Wash.

RONY CAPELLAN
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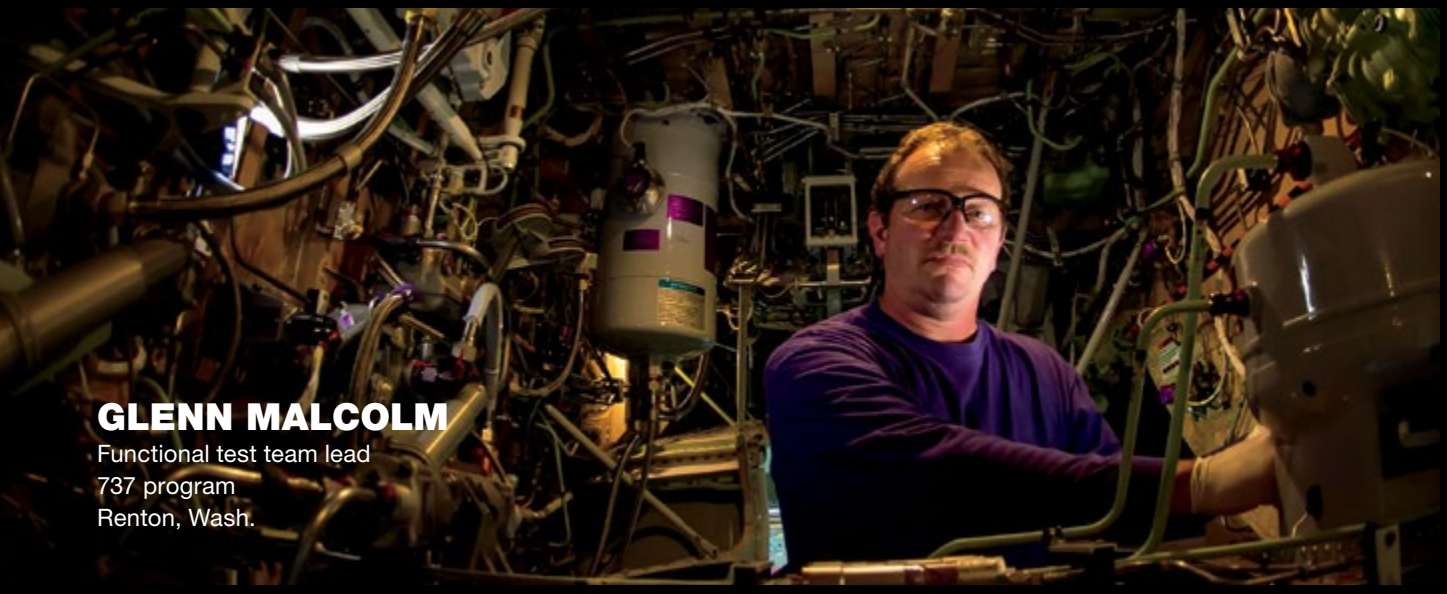

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Quality and Manufacturing
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CAROLYN KIM
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PAUL RENKERT
Crane operator
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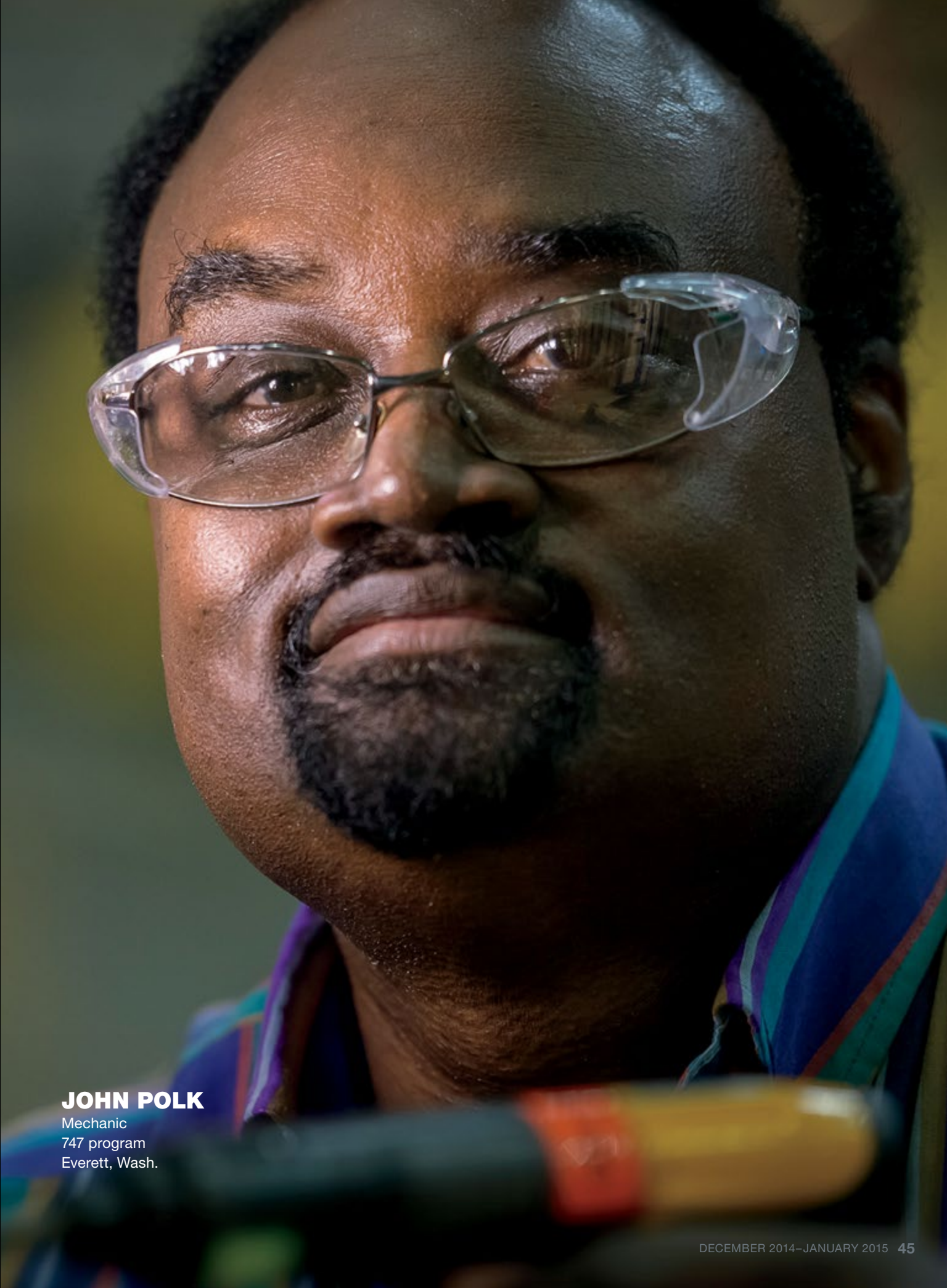
Renton, Wash.



JOHN POLK
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Lab technician
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Smithfield, Pa.

KEVIN MEREDITH
Enterprise Innovation Cell lead
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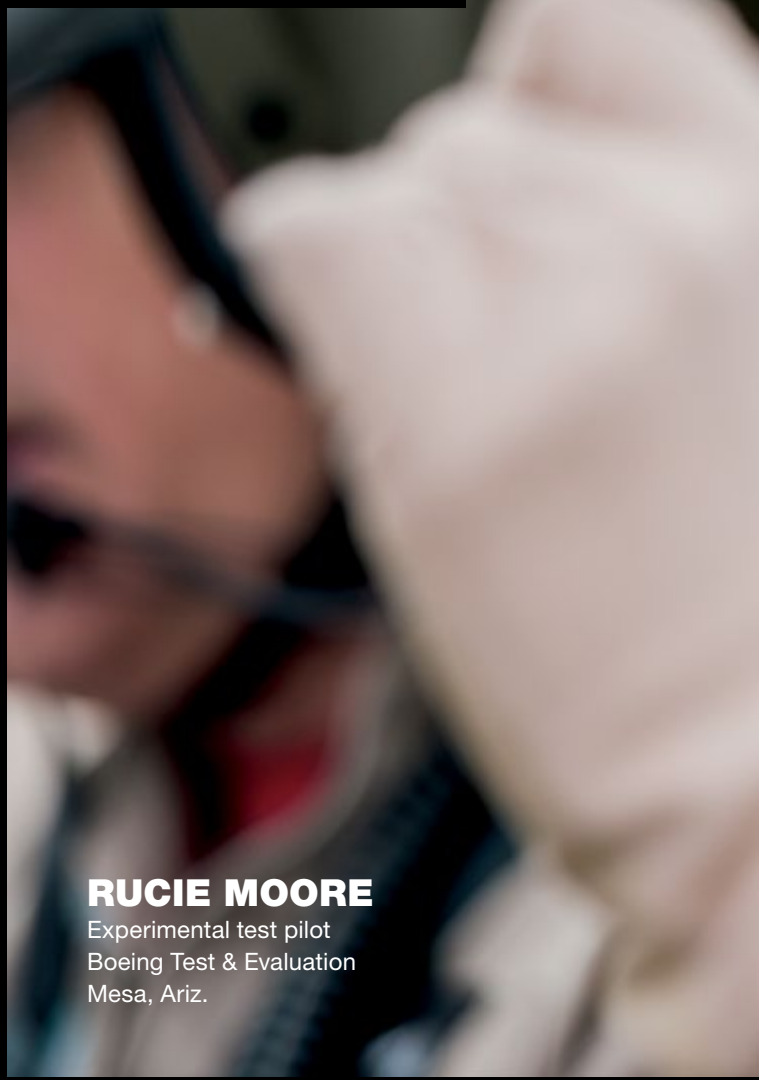

RUCIE MOORE
Experimental test pilot
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ALPHA
ALPHA

BOBBY LOHNES
(Clockwise from top left)
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Advanced Analytics Team
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ALAN DAVIS
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TRACIE WINGROVE
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PAUL ORTMAN
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Advanced Analytics Team
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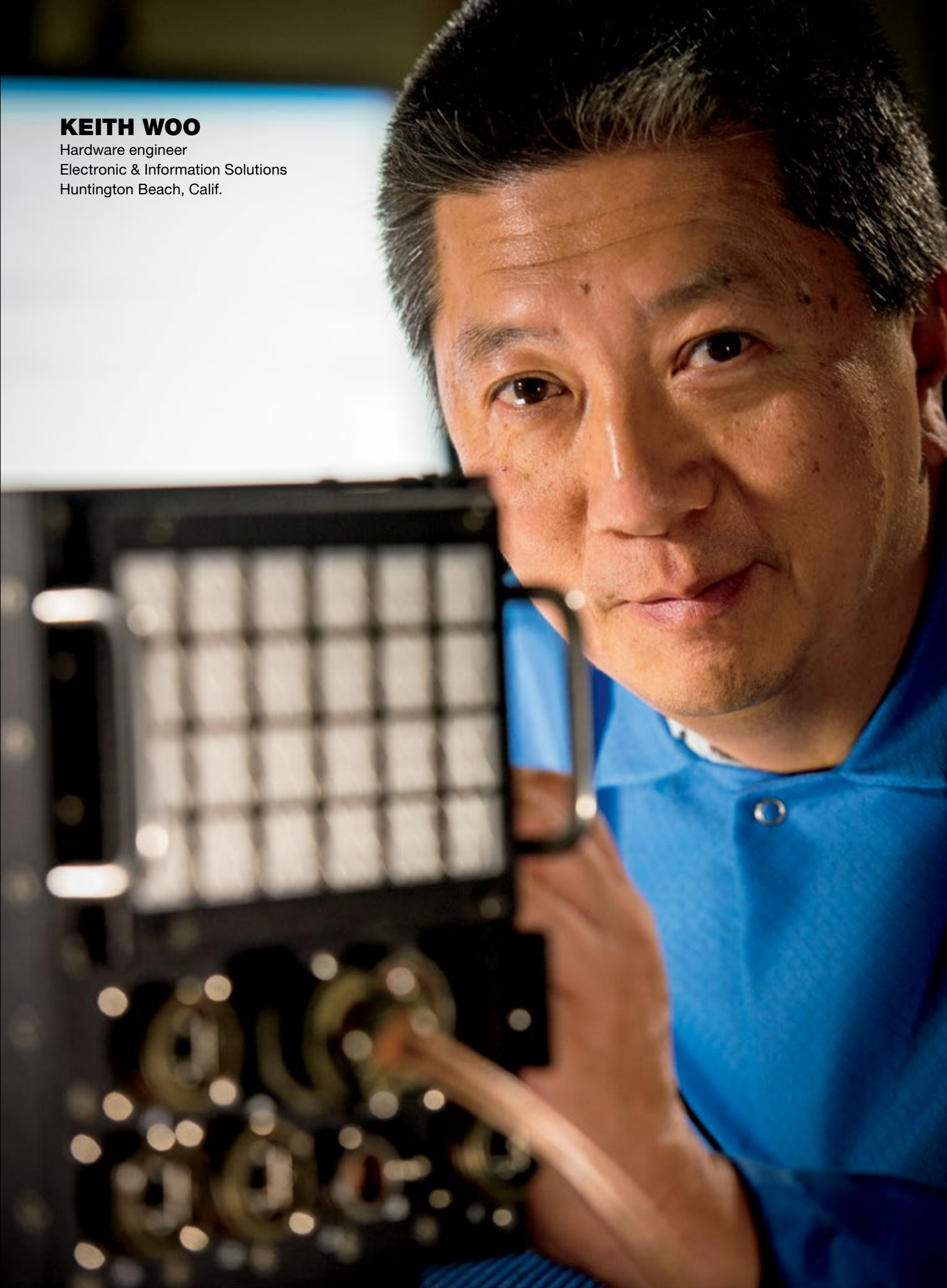

KEITH WOO
Hardware engineer
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P-8A program
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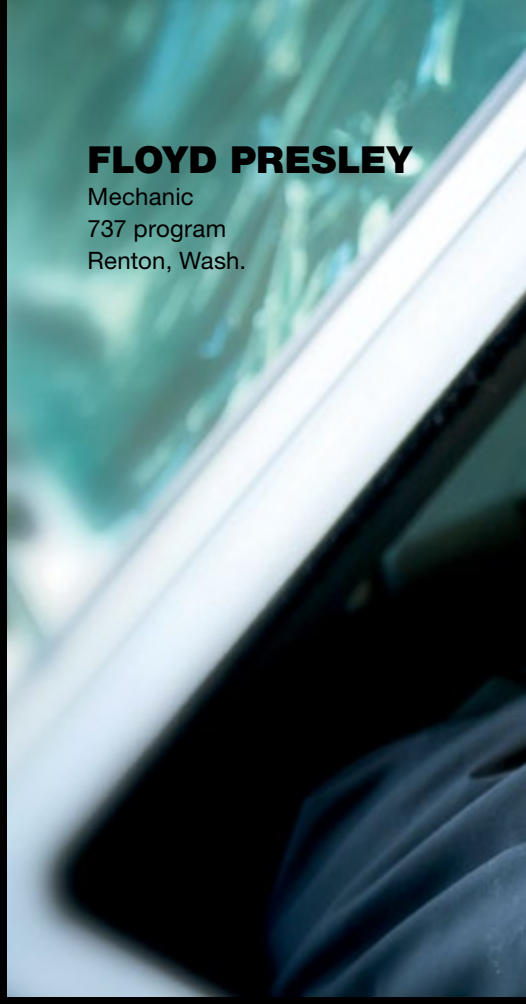
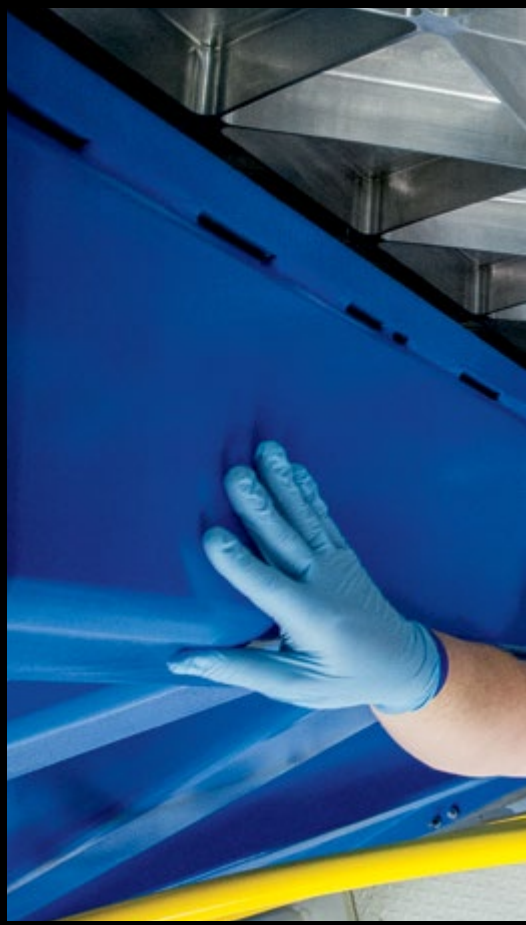


FLOYD PRESLEY
Mechanic
737 program
Renton, Wash.



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CRAIG TENMA
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NASA Michoud Assembly Facility
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ANN ANDERSON
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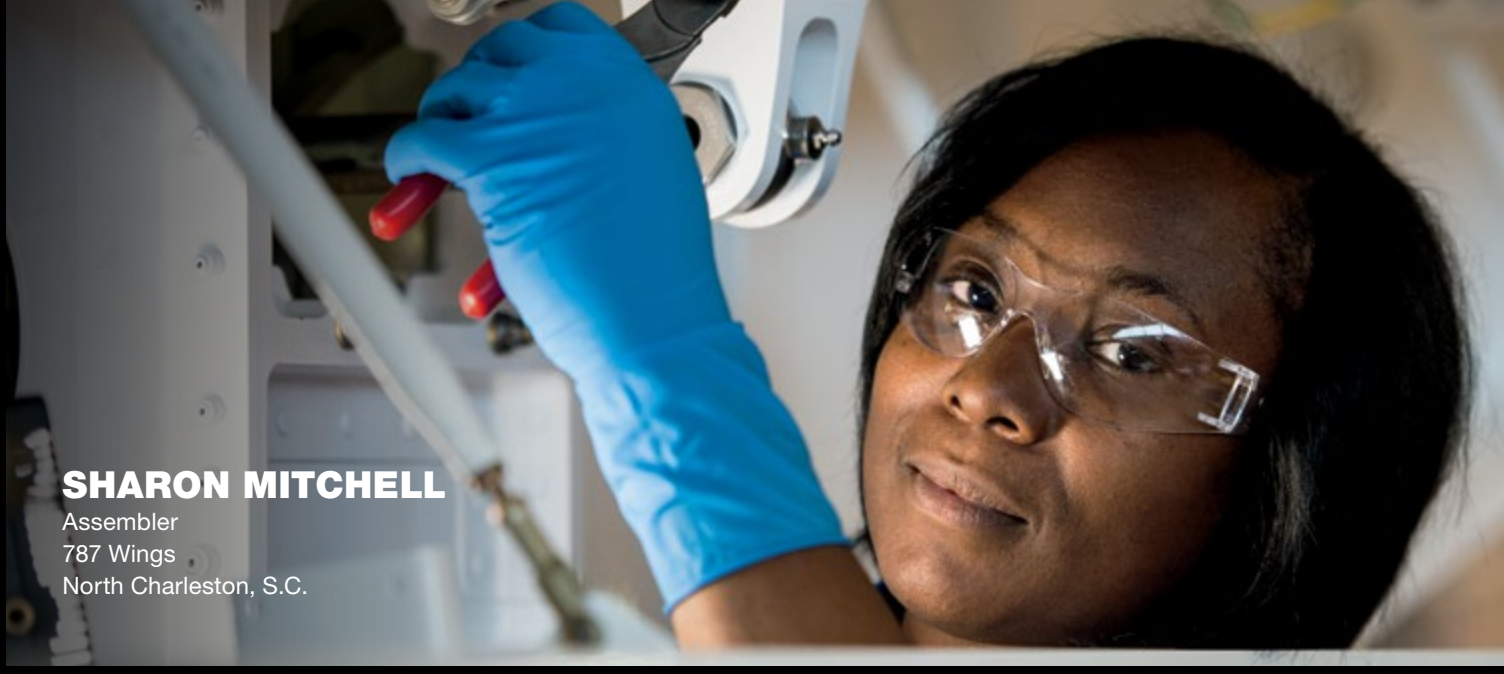
737 Wings
Renton, Wash.

LINDA KARDASHINSKI
Plastic technician
777 Sand and Fill
Winnipeg, Canada



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AMANDA SORENSEN | **KALLY GEHLY**
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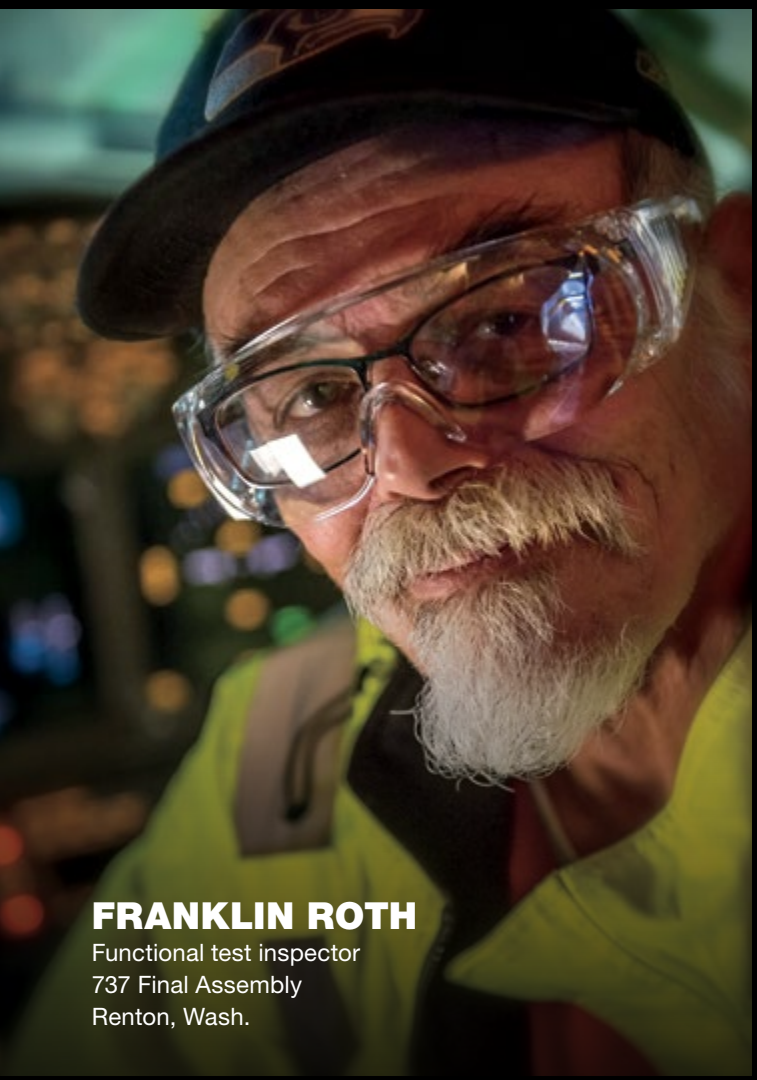

FRANKLIN ROTH
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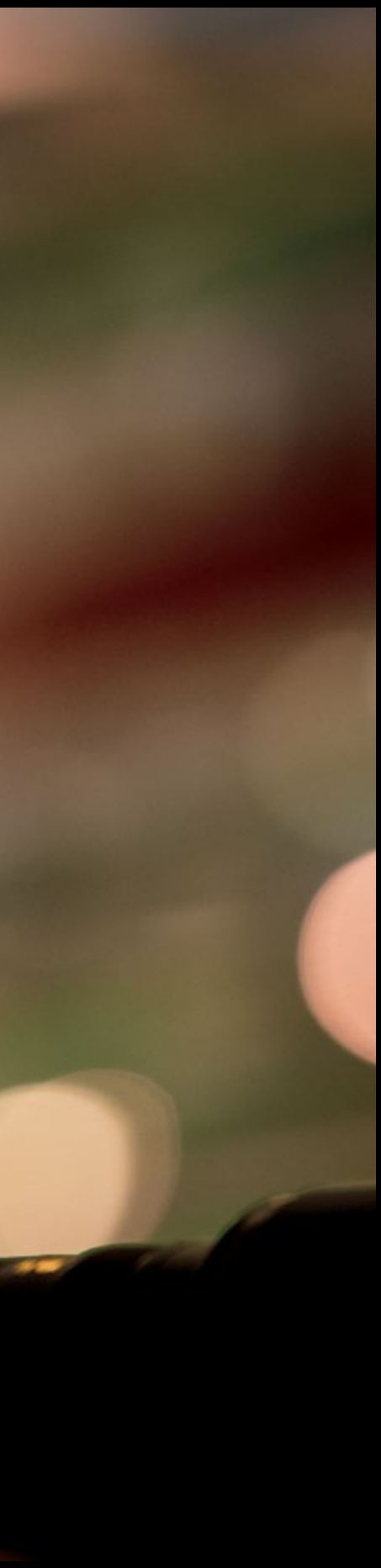
Nikon



The people of Boeing

BY BOB FERGUSON

I get so much more out of photographing the people of Boeing than just pictures.

My first week at Boeing, as a new photographer, someone asked me if I wanted to fly in a helicopter. I showed up and realized I was flying with Pete Conrad and Buzz Aldrin (U.S. astronauts who walked on the moon). Wow. How cool is that.

Often our employees don't realize that what they do is so amazing. I was photographing a crane operator in Everett, Wash., who has been doing this for more than 30 years, and I said to him, "Look at that view!" A huge new 747 was beneath our feet in final assembly. That's something nobody gets on the public factory tour.

"Yeah," he said after a moment to think about it, "I guess that is pretty cool."

But it's the norm. It's who we are, what we do.

We started this project for *Frontiers* because when you ask our people to talk about what they do, how long they have done it, their pride is immediate. They forget about everything else. These are real people with car payments and kids in college and mortgages.

For more than 29 years here I've been photographing everyone from our CEOs to that crane operator, from an office worker to someone whose office is in the sky. My camera has been my front-row ticket to what we get to do here at Boeing.

Just after 9/11, a military commander came to talk to our Apache team in Mesa, Ariz. He gave everybody in the room goose bumps when he said, "You don't need to be in the knife fight to be making a difference. What you are building here, and the quality of your work, is making a big difference to our men and women in uniform." People beamed with pride. That's how important our employees are, and the work they do.

When I meet the people of Boeing I photograph, who do the work, I realize the value of what they do. I try to photograph them in a very honest way about how I feel about them, and how I want others to feel about them. And that's an easy job to do when you are photographing Boeing employees because the minute you start talking with them about what they do, it becomes clear how they feel. Their faces light up. Nothing else matters. They come to work every day helping make the best products in the world.

We hear so much about the Boeing brand. Our people are part of that brand, a big part. It's extremely rewarding when I take their picture and they talk to me about what they do and I see how proud they are. It inspires me. ■

ROBERT.W.FERGUSON@BOEING.COM

PHOTO: JAMES WALLACE | BOEING

Celebrating the future

Virgin Atlantic sets exciting course as new 787-9s join its fleet

BY DAN MOSLEY

Cruising high above the Atlantic Ocean, guests on the inaugural flight of Virgin Atlantic Airways' 787-9 Dreamliner from London to Atlanta danced in the aisles as two hot British bands played a concert in the sky, streamed live to fans on the ground via the airplane's Wi-Fi system. Virgin, known for its exuberant embrace of innovation, called the live-streamed trans-Atlantic concert a first.

It was the type of grand gesture that has characterized Virgin since Richard Branson founded the airline in 1984 and fits with its philosophy "to embrace the human spirit and let it fly."

With October's delivery, Virgin became the first European airline to add a 787-9 to its fleet. Named "Birthday Girl" to honor the airline's 30th anniversary, the jet first flew to Atlanta, home of airline partner Delta, as bands Rudimental and Gorgon City performed their midair gig. Soon after, the airline's 787-9 began commercial service between London and Boston.

Virgin has 16 more 787-9s on order, earmarked for service between London and Washington, D.C.; Newark, N.J.; and New York. Virgin CEO Craig Kreeger also plans to take the London-based carrier's fleet of Dreamliners beyond the U.S. East Coast.

"The 787-9 is a great airplane from an economic perspective in any route that we fly it," Kreeger said. "And it's a particularly good airplane the longer you fly it, where the benefits and fuel savings get bigger. So the West Coast of the U.S. and Asia are two great examples of where we can look to open up future routes with our new fleet of Dreamliners."

With its larger, dimmable windows, LED lighting, and a lower cabin altitude with higher humidity, Kreeger said, the 787-9 is the "benchmark for in-flight service." These features, coupled with Virgin's Upper Class bar, Wi-Fi connectivity and Premium Economy cabin with an area where passengers can stretch their legs, "will truly set the airline apart from its competition," Kreeger added.

Starting operations in 1984 between London Gatwick and Newark with a leased 747-200, Virgin took its first direct delivery, of nine 747-400s, from Boeing in 1997.

The United Kingdom–based airline recently completed an $80 million interior refresh of many of its 747-400s, with bigger seats across all classes and more entertainment options. The 747s fly leisure routes from London Gatwick, Manchester and Glasgow.

With a fleet of nearly 40 airplanes, including the new 787-9, Virgin serves more than 30 destinations across North America, the Caribbean, Africa, the Middle East and Asia.

October's delivery was a highlight of Kreeger's 24 months at the helm of the airline, setting the carrier on an exciting path for the years ahead.

"The first two years have been about preparing the company for a successful future," Kreeger said, "and the Dreamliner is the beginning of that future." ■

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Photo: A Boeing 787-9 Dreamliner in Virgin Atlantic Airways livery. **TIM STAKE | BOEING**

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