

# In-Flight Aerospace

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## Innovation Begins with a Conversation

Innovation drives the aerospace industry. Today, when passengers fly, they can travel 450,000 times farther, fly more than 15 times faster, and use over 9,000 times more power than the Wright brothers achieved at Kitty Hawk, North Carolina. Innovation is a cornerstone for advancements in the aerospace industry. But innovation is more than new products or services. It is about unique solutions that solve complex challenges faced by our customers. At PPG, innovation begins before the launch of a new product, process, or service. It begins with a



Parts Coated in Aerocron®  
Electrocoat Primer

conversation. Every day, our global aerospace teams listen to our customers to help us understand the complex challenges they face and provide them with innovative solutions.

Our customers challenge and inspire us to deliver innovations for aerospace coatings, sealants, transparencies, packaging, and chemical management that meet the ever-changing needs in the aerospace industry. Our people deliver exciting innovations to our customers. These innovations help our customers fly longer distances, reduce maintenance costs, increase aircraft performance, use less fuel, and reduce the environmental impact. PPG's [Opticor® advanced transparency material](#) reduces drag and enhances the passenger's view outside the aircraft. Our advanced manufacturing processes for complex shapes for flight deck windows improve aerodynamics. [Our family of lightweight sealants, Desothane® HD basecoat/clearcoat, and flight deck windows](#) reduce aircraft weight. Our [PR-2870](#) family of chrome free corrosion inhibitive sealants cures faster to reduce application time and offer significant cost savings. Innovative window repair processes reduce our customers' cost of operations. Our [Semco® customized packaging and application systems](#) lower our customers' production and waste disposal costs. The environment is very important to all of us. Our chrome free products provide health benefits to our customers and their employees and are environmentally friendly.

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*Innovation continued from page 1*

Aerocron® electrocoat primer, PR-2870 sealant, water based coatings, innovative packaging and application systems reduce waste streams and lower disposal costs. Color inspires us to provide bright and vibrant coatings. So we developed Andaro® special effects pigments and Desothane® HD basecoat/clearcoat to provide deep, rich colors and more livery options for aircraft. Our innovations focus on what is important to you, our customers.



**Customized Sealants Solutions - PRC® Seal Caps**



**Semco® Packaging and Application Systems**



**Opticor® Advanced Transparency Material**

Our innovations begin with a conversation with our customers. We want to understand your complex challenges and how we can deliver innovative solutions for coatings, sealants, transparencies, packaging, and chemical management. For almost 90 years, our aerospace team has been a leader in developing products and services that redefine “state-of-the-art” and contribute to the next generation of aircraft design and performance. Whether it is building the most advanced airplanes, helping air travelers reconnect with loved ones, or protecting our environment, we focus on what matters most to our customers. We are driven to answer our customers’ most important questions. At PPG, innovation begins with a conversation. Let’s talk about your complex challenges. *The next innovation is waiting.*

# Supporting Globally, Serving Locally

## PPG's Application Support Centers

Each year, worldwide demand for air travel increases. According to the International Air Transport Association (IATA), 3.6 billion passengers flew during 2015, and 3.8 billion passengers will fly during 2016. Global airlines operate, on average, more than 100,000 daily flights from 9,000 airports. At any given time, 8000 to 13,000 aircraft are in the air. Today, airlines are connecting more people to more places around the world than ever before. Demand for air travel continues to increase at a record pace and by 2034, 7 billion passengers are forecasted to board flights. The aviation industry is planning for future demands in air travel. New aircraft, being built at record monthly rates, are flying longer distances, using less fuel, operating at lower cost, and offering passengers new comforts that redefine air travel. Aircraft maintenance services are also evolving to support future demands. In addition, new airport hubs and infrastructures are being developed to support the greater global demand. This global air travel growth creates new challenges for aircraft manufacturers, suppliers, MRO providers, and airlines. PPG is preparing for the growth with new perspectives and increased investments.

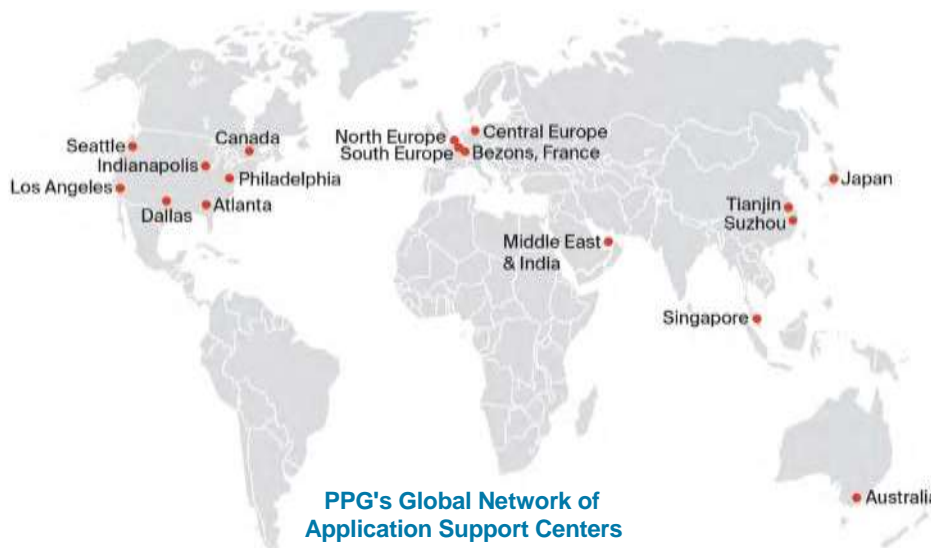
Our customers require solutions that serve their global operations and meet their daily challenges. At PPG, we work with our customers to meet these challenges. Our worldwide network of 17 [Application Support Centers \(ASC\)](#) focus on our customers and provide products and local services to support your operations. Our ASC facilities are strategically located to serve you.

Our ASCs provide customized packaging of sealants to provide the required amount of material needed to minimize waste. We color match and mix your coatings to provide you with the vibrant and bright colors you want. Our team performs light manufacturing to provide assemblies ready for final installation. Our value added packaging of adhesives, sealants, and other chemicals reduce your waste disposal and improve your productivity. We also provide chemical management services to streamline your global environmental

compliance and reduce life cycle costs for your chemical use. In addition to products and services, our ASC network provides technical services, sales and customer support, logistics services. Our specialists provide information assistance your and maintenance activities. Our sales teams customize

solutions across all product lines and provide onsite support for your operations. Our customer service teams provide personalized service for your orders and inquiries, ensuring the right materials and quantities you need. Our logistics team delivers your product in the quantities needed to support your activities.

Our ASC network supports your operations whether you are building an airplane, repairing components, solving an Aircraft on Ground (AOG) issue, painting an airplane, or streamlining your chemical inventories. We work together to solve your most important challenges. Our ASC team is focused and dedicated to one purpose – your success. At PPG, we will continue to provide products and services to protect and beautify what is most important to you.





A photograph of Barry Gillespie, a man with white hair and glasses, wearing a dark suit and tie, sitting at a desk in an office. Behind him is a large world map on the wall and a computer monitor. To the left, there are two framed pictures on the wall, one showing a blue scene and the other a green scene.

# En Route

- Innovation requires investing in technologies, processes, and people
- Lighter weight materials to save fuel
- High performance products to improve service life and performance
- Advanced technologies to enhance the passengers' flying experience

By **Barry Gillespie**

VP Aerospace Products

The aerospace industry is always changing, and the drivers for growth are different today than 10 years ago. Aerospace has a more global footprint with manufacturing, maintenance and flight operations taking place in all regions of the world. Air travel is now accessible to more people, creating greater demand for new air services. Airplanes are flying farther and carrying more passengers to more places which requires innovations in aircraft design and operations. Environmental regulations are changing, and our industry must develop and implement new technologies that reduce the carbon footprint. Different approaches are needed to meet these changes. As the aerospace industry evolves, I am challenging our global PPG aerospace team to identify opportunities using fresh perspectives. Working with our customers is necessary to solve these challenges. At PPG, we are excited about opportunities to collaborate with our customers. Our conversations with you, our customers, are leading to innovative solutions that are focused on addressing your challenges.

Innovation requires investing in technologies, processes, and people. Each year, we make significant investments in these areas. Our global aerospace team is introducing innovations in coatings, sealants, transparencies, packaging and application systems, and chemical management services. Because we collaborate with our customers, our innovations focus on what you've told us is most important to you, including:

- Lighter weight materials to save fuel
- Easier application and faster curing processes to improve productivity
- High performance products to improve service life and performance
- Advanced technologies to enhance the passengers' flying experience
- Environmentally friendly products and services to improve worker health and our environment

We understand that our innovations must solve complex issues and that collaboration with customers is very important. Conversations with customers give us an opportunity to share ideas about the global challenges facing the industry and the local challenges facing your day to day operations. Discussing what is important to you leads to shared perspectives on viable opportunities.

Whether the collaboration takes place during one-on-one conversations or group discussions, sharing ideas is the starting point. It helps us to learn how we can work together and capitalize on our combined unique perspectives and experiences to create innovative approaches. We look forward to focusing on how we can protect and beautify what is most important to you. *Let's talk.*