



Backgrounder

Boeing in Singapore

Boeing and Singapore have worked in partnership for more than 70 years. In 1947, the then-named Malayan Airways Limited acquired its first DC-3 from Boeing heritage company Douglas Aircraft. Today, the island state is our Southeast Asia headquarters where operations include commercial aircraft and defense procurement, services support and training, and advanced research collaboration with the public and private sectors.

Boeing's corporate office in Singapore supports customers throughout Southeast Asia. Business operations include Boeing Commercial Airplanes, Boeing Defense, Space & Security, Boeing Global Services and subsidiaries Aviall, Jeppesen and Insitu Pacific.

Ralph L. "Skip" Boyce has served as president of Boeing Southeast Asia since February 2008. He is responsible for strengthening the company's presence across the region and supporting Boeing growth and productivity opportunities.

Boeing Commercial Airplanes

Boeing Commercial Airplanes' relationship with Singapore dates back to the 1970s, when Singapore Airlines (SIA) embarked on a frequent fleet modernization strategy.

Over the years, SIA has ordered more than 200 Boeing airplanes, including the McDonnell Douglas DC-10, 737, 747, 757, 777 and 787 Dreamliner.

Singapore Airlines introduced 777s into its fleet in 1995, beginning with an order for 34 777s and options for an additional 43 777s. In 2013, SIA helped launch the Boeing 787-10 with an order for 30 aircraft. Most recently in October 2017, Boeing and SIA formally announced a deal for 20 777-9s and 19 787-10s worth \$13.8 billion at list prices.

SilkAir, the regional wing of SIA, started its transition to an all-Boeing fleet after taking delivery of its first Next-Generation 737-800 in February 2014. The delivery was the first of a 54-airplane order, the largest in the airline's history, which included 737-800s and 737 MAX 8s. Silk took delivery of its first 737 MAX 8 in 2017.

SIA's other subsidiaries, Scoot and SIA Cargo, also operate Boeing airplanes. Scoot flies 787 Dreamliners and SIA Cargo operates 747-400 freighters.

BOC Aviation and Boeing have worked together for more than 20 years. The Singapore-based global aircraft leasing company placed its largest-ever order in August 2014 for 50 737 MAX 8s, 30 Next-Generation 737-800s and 2 777-300ERs (Extended Range), valued at \$8.8 billion at list prices. In March 2017, the lessor took delivery of its 200th Boeing airplane. In August 2017, BOC Aviation joined the new 737 MAX 10 launch group of customers with an order for 10 airplanes.

Commercial Airplanes suppliers

Singapore has several suppliers producing parts for all Boeing Commercial Airplanes programs:

- ACP Metal Finishing provides surface finishing for metallic parts.
- Applied Total Control Treatment provides special processing of airplane parts.
- Betzler (Asia) Consortium supplies machined castings.
- Diethelm Keller Aviation Pte. Ltd. supplies commercial airplane galley carts.
- Jamco supplies 737 commercial airplane galleys as well as 777 business class and first class seats.
- JEP Precision Engineering provides machined castings for 787 landing gear components and 737 engine casings.
- Rolls-Royce produces 787 engines.
- Singapore Aerospace Manufacturing assembles electric power conversion systems for 787 and machined parts for engine casings.
- Thales Singapore Production Center provides 787 electric power conversion systems.
- UTC Aerospace Systems designs and manufactures technologically advanced aerospace systems and components.

Boeing Global Services

The Boeing Training & Professional Services Singapore campus opened in 2007 and is the company's largest aviation training facility in Asia. The facility supports training on the 737 MAX, Next-Generation 737, 777 and 787 Dreamliner training suites.

In 2015, Boeing and SIA Engineering Company (SIAEC) formed Boeing Asia Pacific Aviation Services (BAPAS), a joint venture to provide industry-leading engineering, repair and maintenance services for Boeing airplanes. BAPAS combines Boeing's design, manufacturing and engineering knowledge with SIAEC's maintenance, repair and overhaul expertise to deliver Global Fleet Care Solutions to customers in Asia-Pacific, such as engineering, materials and maintenance programs. Boeing holds a 51 percent equity stake in the joint venture with the remaining 49 percent owned by SIAEC. The joint venture currently services 737s, 747s, 777s and 787s.

Boeing Global Services also provides maintenance support for Scoot's 787 Dreamliners and Singapore Airlines' 777-300ERs through its Global Fleet Care program. Most recently in November 2017, BAPAS entered into an agreement with SIA Cargo to provide Global Fleet Care services to its entire fleet of 747-400 freighters.

Boeing Defense, Space & Security

Boeing has been a defense supplier to Singapore since the early 1990s. The island state was the first country in Southeast Asia to select the AH-64D Apache Longbow. The Republic of Singapore Air Force's (RSAF) inventory also includes F-15SG multirole

fighters and the CH-47 Chinook, which has played a significant role in disaster relief operations around the world.

In 2017, four Republic of Singapore Air Force (RSAF) CH-47 Chinooks from the Peace Prairie detachment in Grand Prairie, Texas, provided assistance in the Texas Army National Guard's Hurricane Harvey disaster relief operations. The RSAF's Peace Prairie detachment has worked together with the Texas Army National Guard in the past, including relief operations after Hurricane Katrina in 2005, fire-fighting and flood relief operations in Texas in 2000 and Hurricane Floyd relief operations in North Carolina in 1999. The RSAF also flew missions to provide food, water and shelter to survivors of the 2004 tsunami in Indonesia and Thailand.

The Ministry of Defence, Republic of Singapore Navy, and Defence Science and Technology Agency are also customers of Boeing Defense, Space & Security.

Boeing Research & Technology

In 2005, Boeing and the Singapore Agency for Science, Technology and Research (A*STAR) signed a Master Research Collaboration Agreement (MRCA) to investigate and develop research projects of mutual interest for the aerospace industry.

Boeing joined a consortium of aerospace firms collaborating with A*STAR in the Science and Engineering Research Council (SERC) Aerospace Program in 2007. The program focuses on research in aerospace-support technologies, including defect inspection, manufacturing automation, non-disruptive testing and materials development. In 2012, Boeing started to harvest technologies with seven projects developed by the consortium, and each year it identifies new technologies to be transitioned to Boeing from the consortium.

In 2008, Boeing and A*STAR's Institute for Infocomm Research (I²R) also entered into a multidisciplinary R&D collaboration agreement to focus on critical technology development in the area of smart factory. This collaboration centers on intelligent monitoring and advanced self-healing capabilities. The I²R-developed health monitoring devices and dashboard have since been installed in more than 300 machines in Auburn, Washington, as a pilot test. To date, the system's Intelligent Factor Alerts and Condition-Based Maintenance have resulted in \$11.2 million in operational cost savings. Boeing continues to work with I²R in sensors and systems development such as clean rooms monitoring and composite inspection for improved productivity and efficiencies at our factories.

Boeing also joined Procter & Gamble in launching the Live Well Collaborative — Singapore. This is a consortium focused on the development of products and services for consumers who are 50 years of age and above. Boeing is focused on developing commercial aircraft interiors that are more inclusive to a wide range of physical capabilities.

Boeing Global Engagement

Boeing is an active member of the local community in Singapore. Collaborations with nongovernmental organizations (NGO) and proactively organized employee and charity events have helped vulnerable individuals, the elderly and low-income households.

Collaborations With NGOs

Boeing supports the Hagar Singapore's Trauma Recovery and Resettlement program that provides care to women and girls who have been victims of exploitation. Boeing Singapore employees also participated in Project HomeWorks, in partnership with Habitat for Humanity where they helped to clean homes of the needy in Chinatown.

Employee Engagement and Charity Events

In 2016, Boeing employees and their family members participated in a fun four-kilometer walk around the Marina Bay area. All participation fees were donated to the ComChest Heartstrings Walk charities.

In another effort to support the international coastal clean-up campaign, the Boeing Coastal Clean-up volunteers collected 29 kilograms of trash along East Coast Beach.

Boeing employees also participated in the SIA Engineering Group Corporate Social Responsibility Fun Run@Zoo event. Half of all Boeing participant fees went to charity.

Boeing University Relations

Boeing Singapore is helping to grow the local talent pool of science, technology, engineering and mathematics (STEM) students by partnering with the National University of Singapore (NUS). Launched in 2016, the tie-up sees Boeing supporting NUS in curriculum enrichment for the School of Computing Camp, Faculty of Science Student Talks, Faculty of Engineering Industry Awareness Week and the STEM-related Showcase and Case Challenge Competition.

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Contact:

Jay Krishnan
+65 6800-5107
jay.krishnan@boeing.com

Joanna Pickup
+1 425-879-6077
joanna.pickup@boeing.com

Amrita Dhindsa
+91 96546-06067
amrita.dhindsa@boeing.com

Kenneth Mercer
+1 312-544-2229
kenneth.b.mercer@boeing.com

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