Boeing and Russia have a long-term partnership in multiple areas, including aviation, metallurgy, space, engineering and information technology. The company is also committed to its relationship with the Russian aviation industry and airline operators, providing fleet solutions for the country’s market. In addition, Boeing collaborates with leading Russian aerospace companies on the International Space Station program.

### OUR COMMITMENT AND PARTNERSHIP

<table>
<thead>
<tr>
<th>Statistic</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1970</strong></td>
<td>Beginning of Boeing-Russia partnership</td>
</tr>
<tr>
<td><strong>35%</strong></td>
<td>35% of all titanium parts for Boeing Commercial Airplanes programs are from Russia</td>
</tr>
<tr>
<td><strong>$142M</strong></td>
<td>$142M in contracts with Russian companies for International Space Station activities</td>
</tr>
<tr>
<td><strong>50%</strong></td>
<td>50% Boeing commercial fleet market share in Russia</td>
</tr>
<tr>
<td><strong>500+</strong></td>
<td>500+ Boeing airplanes operated by Russian and Central Asian airlines</td>
</tr>
<tr>
<td><strong>1,280</strong></td>
<td>1,280 new commercial aircraft required by Russia and Central Asia in the next 20 years</td>
</tr>
</tbody>
</table>

### INVESTMENTS

Boeing investments in Russia have helped grow the local aerospace sector, creating jobs and driving innovation for mutual benefit.

<table>
<thead>
<tr>
<th>Statistic</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>$600M</strong></td>
<td>Annual contribution in direct support of Russia’s economy</td>
</tr>
<tr>
<td><strong>8</strong></td>
<td>8 Boeing subsidiaries, R&amp;D facilities and joint ventures in Russia</td>
</tr>
<tr>
<td><strong>2,000+</strong></td>
<td>2,000+ high-tech jobs created in Russia</td>
</tr>
</tbody>
</table>

### COMMUNITY GIVING

Boeing is proud to support important causes such as health, human services and education in Russia through our work with community partners.

<table>
<thead>
<tr>
<th>Statistic</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>$2M+</strong></td>
<td>$2M+ charitable contributions to Russia over the past five years</td>
</tr>
<tr>
<td><strong>8,000+</strong></td>
<td>8,000+ high school students participating in Boeing scholarship program in Russia</td>
</tr>
<tr>
<td><strong>50+</strong></td>
<td>50+ Boeing-supported charitable projects in Russia</td>
</tr>
</tbody>
</table>
BOEING IN RUSSIA

Technical Activities and Partnership

Boeing Technical Research Center
In 1993, the Boeing Technical Research Center (BTRC) opened in Moscow. At the center, Boeing cooperates with leading Russian research institutes to develop new materials for the aerospace industry. More than 600 Russian scientists and IT specialists work on Boeing contracts in flight science, titanium materials and technologies, flight safety training and information technology.

Boeing Design Center
The Boeing Design Center (BDC) in Moscow opened in 1998. It is the largest engineering center for computer-aided design of aerospace structures outside the United States. The BDC consists of more than 300 Boeing direct employees managing a team of 1,200 contract engineers from Russian and Ukrainian engineering companies. The BDC has participated in hundreds of Boeing Commercial Airplanes projects in support of the 737, 747, 767, 777 and 787 Dreamliner.

VSMPO-AVISMA titanium partnership
Russian titanium producer VSMPO-AVISMA is a Boeing partner and supplier. Boeing awarded its first contract to VSMPO in 1997. Boeing Commercial Airplanes currently purchases 35% of its titanium supply from VSMPO-AVISMA. The Boeing–VSMPO Innovation Center was established in 2000 to expand cooperation and perform joint research and new alloy development.

Ural Boeing Manufacturing joint venture
The Boeing–VSMPO 50/50 equity joint venture Ural Boeing Manufacturing (UBM) opened in July 2005. UBM currently performs rough machining of forgings for the 737, 777 and 787 programs.

In July 2017, UBM became a resident of SEZ Titanium Valley. In September 2018, the second UBM facility opened in the SEZ, doubling the joint venture’s production volume.

EDTO certification (formerly ETOPS) for cross-polar routes
Boeing helped Russia certify to Extended Diversion Time Operation (EDTO), allowing the use of new cross-polar routes. Leading Western airlines have made thousands of scheduled flights along these routes, saving money, fuel and flight time and significantly reducing carbon emissions. Cross-polar routes opened for regular operations in 2001.

Boeing Flight Training and Research Campus in Moscow
In June 2016, Boeing opened a flight training center in the Skolkovo Innovation Center in Moscow. Aviation training in the facility includes pilot recurrent training for the Next-Generation 737 and 777 plus custom-made courses. The training campus is a significant investment in the region’s aviation safety and will reduce travel times for airline crews as well as training costs.

The Boeing 2019 Pilot & Technician Outlook estimates that Russia and Central Asia will require 27,000 new commercial airline pilots, 25,000 new technicians and 30,000 new cabin crew by 2037. The outlook also includes data from the business aviation and civil helicopter sectors.

Boeing Investment in Russia and Central Asia
Boeing activity in Russia contributes more than $600 million annually in direct support to Russia’s economy. Boeing has created more than 2,000 high-tech jobs in Russia and has become one of the largest Western customers for exported Russian intellectual services, including engineering, research and development, and IT.

Boeing Global Engagement
Boeing has supported more than 50 charitable projects in Russia focusing on health and human services, education, and arts and culture. Boeing Russia philanthropy efforts include cash grants, in-kind donations and employee volunteerism. In the last five years, Boeing has donated over $2 million toward charitable projects in Russia.

Boeing Commercial Airlines
Some 64 Russian and Central Asian airlines and customers operate more than 500 Boeing airplanes (737s, 757s, 767s, 777s, 787s and 747s). Boeing has a roughly 50% share of the Western-built fleet market. According to the 2019 Commercial Market Outlook, Russia and Central Asia will need about 1,280 new airplanes, valued at nearly $160 billion, over the next 20 years.

Boeing Defense, Space & Security
Since 1992, Boeing has cooperated closely with the Russian space industry as a partner and contractor to the leading Russian space enterprises — Rocket and Space Corporation (RSC) Energia and Khrunichev State Research and Production Space Center — on the most visible and important space programs, such as Shuttle-Mir and the International Space Station.

In November 2013, Boeing and Khrunichev Space Center signed a contract on the space station’s Functional Cargo Block (FGB) module checkout and service life extension to ensure safe and effective operation of the FGB until 2020.

Over the past five years, Boeing has signed contracts with Russian companies in excess of $142 million for space station activities.

Boeing Global Services
For more than 10 years, Boeing has contributed to the Russia and Central Asia market by providing support and services to the airlines in the region.

According to the 2019 Services Market Outlook, the Russia and Central Asia commercial airline fleet will sustain the need for aviation services, valued at $270 billion, over the next 20 years.

A HISTORY OF PARTNERSHIP

1975
Boeing participates in the historic U.S.-Soviet space mission, Apollo-Soyuz

1992
Boeing begins cooperative relationship with the Russian space industry as a partner and contractor

1993
Boeing Technical Research Center opens in Moscow

1997
Boeing awards its first contract to VSMPO-AVISMA

1998
Boeing Design Center opens in Moscow

2000
Boeing and VSMPO-AVISMA establish innovation center to expand cooperation and continue new alloy development

2001
Cross-polar routes open for regular operations

2009
Boeing-VSMPO joint venture UBM opens in Sverdlovsk Oblast, Russia

2016
Boeing opens Flight Training and Research Campus in the Skolkovo Innovation Center in Moscow

2018
Second UBM facility opens in SEZ Titanium Valley