

Bombardier Aerospace  
([www.aero.bombardier.com](http://www.aero.bombardier.com))  
Montreal, Canada

Autodesk® 3ds Max® Design software

Autodesk 3ds Max Design is the core of our production pipeline. We simply couldn't do what we do without it.

—David Rees  
Lead 3D Digital Artist  
Bombardier Aerospace,  
Global Aircraft

# HIGH STYLE

## Bombardier Aerospace Uses Autodesk 3ds Max Design to Bring Functionality, Style, and Convenience to Buyers of Business Jets.



Image courtesy of Bombardier Inc.

### Summary

It was more than 70 years ago that Quebec mechanic Joseph-Armand Bombardier came up with the idea for a vehicle that could “float on snow.” A series of military, industrial, and recreational vehicles resulted – including the iconic Ski-Doo® snowmobile brand – but even a visionary like Bombardier himself could hardly have imagined how high his company would one day fly. Today, Bombardier Aerospace is the world’s third largest civil aircraft manufacturer and an undisputed leader in the design and manufacturing of aviation products and services for the business, regional, and amphibious aircraft markets.

Bombardier’s Learjet, Challenger, and Global business jet families together cover 95 percent of the business aircraft market. Not surprisingly, that market is a demanding one. While a private jet may be a distant fantasy for most of us, it is nothing less than a necessity for many large corporations and a sought after luxury for some fortunate individuals. Autodesk sat down with several members of the design teams responsible for the interior and exterior designs of these business jets to talk about their use of Autodesk® 3ds Max® Design software.

### The Challenge

If you’re not a CEO of a large corporation or a wealthy jetsetter, let’s fantasize for a minute. You need a comfortable, functional jet – or jets – that will allow you and a group of your colleagues or friends to get where you’re going in comfort and style. Chances are you’ll be working closely with Bombardier Aerospace, which provides the vast majority of private business jets in the world. Once you’ve selected your aircraft, whether it is a Learjet 60 XR (seats 8), a Challenger 850 (seats 14), or a Global Express XRS (seats 19), you’re going to want to customize your new purchase with your company brand or personal style. That’s where the Bombardier Aerospace 3D designers – and Autodesk 3ds Max Design software – come in.

“We do mainly the interior visualization work,” says David Rees, Lead 3D Digital Artist for Bombardier’s Global aircraft line at Bombardier’s Advanced Visualization and Media center in Montreal. “We visualize some of the exterior paint work, but our major work comes with the interior floorplans and décor. In the past, we only used 3ds Max Design visualizations to confirm the customer’s choices, which used to be much more limited. These days, we’re involved much earlier in the design process and create many more iterations in much less time. Autodesk 3ds Max Design has gone from a rendering tool to a design tool.”

**Autodesk®**

# At Bombardier Aerospace, we are constantly evolving. 3ds Max Design is a vital and integral part of that evolution. The way it helps us relate to and satisfy our customers has been invaluable, especially in the last couple of years.



Image courtesy of Bombardier Inc.

According to Evie Kokkinos, Group Lead Designer of the Challenger aircraft, renderings that used to take months to create and deliver to customers – usually as a beautiful gift that also confirmed their design – are now completed within days of the customer's signing for the jet.

"We're using Autodesk 3ds Max Design more as a design tool than ever before," she says. "The customer can pick and choose from an increasingly wide variety of possibilities. Design choices are now being made and revised as a result of these renderings."

## The Solution

The need to meet increasing customer expectations has inspired the design teams to develop more innovative ways for customers to configure their aircraft. Indeed, the Global design team has used Autodesk 3ds Max Design to develop and deploy an online design selection tool they call SNAPSHOT ([snapshot.bombardier.com](http://snapshot.bombardier.com)), which enables customers to select colors, veneers, fabrics, and more for their aircraft and see the results almost immediately.

"We really got the idea from the automotive industry sites, where you can pick colors and other options through Adobe® Flash® plug-ins," explains Patrice Malo, 3D Digital Artist for Global aircraft. "Our aircraft are much more complex, of course, but by pre-rendering literally thousands of different variations of fabrics, leathers, sidewalls, and veneers with 3ds Max Design, we've created an experience where visitors can go in, create different schemes for their planes and save them to the site. This way, prior to even meeting with the customer, we have a good idea of what they are after. We can customize our presentation to what they've already investigated, and we can come up with further possibilities as well as warn them of any potential problems."

And, yes, there can be problems. In their desire to make their high-flying space as comfortable as possible, many customers will request features and amenities more appropriate to homes or cars than to aircraft that fly so high above the ground. Visualizations of the interiors give both the customer and the Bombardier artists a better understanding of what is and is not possible.

"We get diverse requests for sure," says Kokkinos. "Some cosmetic ideas alone are mind-boggling. Other times, the request might be very practical, like having a functioning shower or a specific fabric. Those may not seem like big deals, but aircraft have to pass vigorous safety standards, particularly for flammable materials and weight. With 3ds Max Design, we're able to give customers exactly what they're asking for. Then, we can use 3ds Max Design to show customers beautiful, functional, and safe alternatives. It is much more of a collaborative process."

## The Result

Despite the recent economic downturn, the Bombardier design teams are keeping busy. A recent customer purchase of a large number of aircraft had the team create some 25 different iterations and renderings of possible interiors and plane features. Global 3D Digital Artist Donald Colantonio tackled the task with 3ds Max Design.

"Not surprisingly, the customer didn't want to see technical drawings of the aircraft features, he wanted illustrations," he says. "I worked exclusively on that project for some time, and it required a great deal of collaboration with our aircraft engineers to create an illustrated book of visualizations of exactly how his planes would come together. We used Autodesk 3ds Max Design to combine a technical and illustrative style that he could understand much more readily."

Indeed, purchases of multiple aircraft invariably have their own specific design challenges, according to Rees. "When we have customers buying multiple aircraft, they usually want a specific type of corporate branding to spread across the different planes," he says. "Using 3ds Max Design renderings, we're able to reveal how the different sizes and shapes of aircraft can still have consistent branding. That has helped our customer buy-in tremendously."

Even with something as grand as private jets, the old adage still proves true: the customer *is* always right. And Bombardier can support that with the help of 3ds Max Design software.



Image courtesy of Bombardier Inc.

"3ds Max Design is simply the best tool for understanding and providing exactly what our customer wants, which is ultimately what we are determined to provide," says Kokkinos. "At Bombardier, we are constantly evolving, and 3ds Max Design is a vital and integral part of that evolution. The way it helps us relate to and satisfy our customers has been invaluable, especially in the last couple of years. What used to be aesthetic flourishes are now revealing important functionality. Sometimes, we have options that we wish to promote, like two seats coming together to form a bed, for example. We can create a 3D animation to show the customer exactly what they are purchasing. That is simply huge. All of this has proved a big help in customer meetings. We can provide a wonderful experience and be absolutely thorough. The more details that can be settled and agreed upon, the happier everyone is going to be."

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—Evie Kokkinos  
Group Lead Designer  
Challenger Aircraft,  
Bombardier Aerospace