

The Ultimate in Cabin Comforts

by Dan Smith

Aircraft are practical things. Like cars, they are designed to get us from point A to point B in the least amount of time and with the least amount of fuss. Simple really. If you've taken any North American commercial flight recently, you will see how the scheduled airlines are distilling this philosophy down to a fine art.



However, travel on a private aircraft and you will notice an immediate difference. Someone, somewhere has spent a lot of time thinking about how you will use the space on your journey and how, through appropriate and intelligent design, they can make that journey more comfortable for you.

Choice of Fit-out

For the uninitiated, most new aircraft are delivered “green” (the expression is inspired by the colour of the fuselage before it is painted and not the environmental credentials of the jet.) The interior is empty except for the wiring and basic equipment needed to get the aircraft into the air and to the completion centre where the final fit-out takes place.

The first owner of an aircraft usually gets to choose its interior. However, some manufacturers offer clients a choice of fit-outs that have been pre-designed by an expert aviation-design consultancy. Embraer’s new Legacy 450 and 500 jets come complete with interiors designed by BMW Group DesignworksUSA. “The task for our design partner was to provide the best possible comfort for the pilot, fulfill all the requirements of a modern business passenger, combine premium aesthetics with superior design quality and, by doing so, set a new benchmark in this business jet segment,” said Colin Steven, Embraer’s Vice President Marketing & Sales EMEA, Executive Jets.

Dassault and DesignworksUSA also worked together on designs for the 7X which was recognised with a 2009 Good Design Award from the European Centre for Architecture Art Design and the Chicago Athenaeum.

Something Special

If your new aircraft is delivered green, or you have bought a pre-owned aircraft that needs an update, you are free to choose any design agency or completions centre. Be warned though, waiting times are still long at some centres despite the great recession!

M&R Associates works with clients on the design for the interior before commissioning a completions centre to do the actual fitting out. While owners are free to go wild with the interior design if they choose to, Vincent Rey, Director of M&R says that clients typically fall into one of two categories: “There are those that use the aircraft regularly and plan to keep it for 10 to 15 years. They often choose something very personal. Clients who plan to charter the aircraft or sell it after three to five years usually opt for a more traditional interior.”

M&R recently designed a new interior for the Airbus A350 aircraft, even though the first VIP edition of the aircraft will not be available until 2015. The aim is to show prospective buyers what is possible, and naturally, the creativity of M&R Associates. “Airbus really liked the designs and their sales people are now using the images as a marketing tool,” says Rey. “We’ve had good feedback.” >>



Rotorcraft Comfort

The company has also designed interiors for helicopters, a process Rey describes as being completely unlike designing aircraft interiors: "It's a different approach as there are other issues to consider such as noise and flight time. Rotor flights are typically 30 to 90 minutes so passengers don't necessarily need refreshments, DVDs or other cabin comforts that have become standard in fixed-wing aircraft.

Vibrations are a major concern for helicopter designers as they affect both the reliability of the aircraft and the comfort of its passengers. The research and development team at Eurocopter have been studying this problem for some time and have already implemented a five-blade main rotor on the company's EC155 and EC255 models which have reduced vibrations significantly.

Eurocopter has also developed an advanced anti-vibration system known as the Grand-Comfort Pylon Isolator.

Effectively the system filters the loads transmitted via the struts that connect the main gearbox to the airframe. Following around 25 hours of inflight tests, Eurocopter reported that the modification has cut vibrations in the cabin by half.

Air Quality and Humidity

The company is also developing an air-conditioning module which effectively mirrors the systems in use in vehicles. It features automatic temperature regulation, multi-zone airflow, air filtering and user-friendly interfaces. While the system is still in development, Eurocopter has plans to install it on their medium-twin EC175 and EC225 models.

Air systems are also a focus of efforts to increase comfort on fixed-wing aircraft. Comlux, which has a creative design team and completions centres in the US and Europe, is currently installing a cabin pressurisation and air-distribution system on its own brand-new A320 aircraft. Known as CTT, the system

helps to normalise the humidity levels inside the aircraft.

Typically the humidity level in homes and offices is between 50 and 60%, but onboard an aircraft it can drop as low as 5 to 15%. Many people start to notice health problems such as dry eyes and breathing difficulties when the humidity drops below 20%. "About 80% of jetlag can be attributed to cabin humidity," explains Severine Cosma, Head of Marketing and Communication at Comlux. "The CTT system helps people feel more comfortable. When you fly often, you really feel the benefit."

CTT has already been installed on other wide-body aircraft. However, Comlux will test and evaluate the system on their new A320 before it is integrated into any future aircraft the company may purchase. "The great thing is that it is being installed on our own aircraft," says Cosma. "We will get lots of feedback from our crews and passengers." >>



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Cabin entertainment and business productivity systems are also a focus of attention for aviation interior designers. Advances in technology have seen voice and Internet communications become standard features on most business aircraft. "Cabin entertainment systems are big – especially touch screens, remote controls and DVD," explains Eric Gillespie, Sales and Marketing Manager, for Flying Colours Corp, a completions and design centre based in Ontario, Canada. "The emphasis on these systems is customer-driven; it's a crossover from home entertainment."

Jim Dixon, Director of Aviation at Andrew Winch Designs agrees: "One of the key factors to our designs is the need to create a continuation of the client's lifestyle in the air. Passengers should be able to continue with the least interruption possible when going from A to B." To achieve this, Andrew Winch Designs develops a bespoke solution for each aircraft that is specific to the requirements of the client.

Although the avionics on an aircraft typically offer the latest in technology, cabin entertainment systems do lag behind what is available for your home or office. "Aviation regulators place heavy restrictions on customer-facing technology due to the tight certification requirements," says Dixon.

"It takes between six and eight months to complete a green aircraft," says Gillespie. "In this time, the available technology can change." So can clients 'future-proof' their aircraft? It is difficult says Gillespie: "However, systems such as LED lighting are ideal as they require zero maintenance during their life. I am quoting for LED on all new projects. It has become almost standard." At Andrew Winch Designs, the focus is on ensuring components can be swapped-out if necessary. "We ensure that equipment, fixtures and fittings are able to be easily replaced and upgraded, increasing asset value in the long term," says Dixon.



Comfort First

Turning the inside of an aircraft into a stylish cabin in which people feel comfortable is a real challenge for designers. However, there are some tricks they use to achieve this. "We plan long sightlines through the owner's space, and use light and soft materials to help increase the appearance of the area," says Dixon. "We aim to create multi-use spaces through clever creativity, for example a private office that can be converted into a fully functioning yoga room."

Creating a feeling of ownership is also important explains Gillespie: "Styling is the big thing! People want to customise their interior and make it personal, but they also keep an eye on the resale value. Special inlays of cabinetry can be specified to give the client the feeling that the aircraft is theirs."

Going the Extra Step

Comlux, which operates its own charter fleet, has recently equipped its jets with beauty products from Molton Brown of London to help make people feel at home onboard.

The idea came from the company's Inflight Products and Services Manager who was appointed two years ago to take control of catering on aircraft that Comlux charters. Prior to this, crews took care of supplies and catering on the aircraft. "Our catering costs could be quite expensive and quality was inconsistent because crew A would buy from one business and while crew B bought from someone else," explains Cosma. "The manager now provides details of preferred suppliers, quantities to be ordered and any special dietary requirements." >>>





Comlux A319 interior

The role has evolved over the past two years and now the Inflight Products and Services Manager looks after all the cabin accessories used onboard including linen, towels, beauty products and even the eye masks which are branded with the Comlux angel logo. "It has been very beneficial to have this person during the downturn," says Cosma. "He has taken control of all the small things and saved us money in the process." Comlux still purchases special items for regular clients and aircraft owners who express a preference. "It's an extra service on top," says Cosma. The Manager has also arranged training for the Comlux flight crews at a top hotel training school in Lausanne. "They learn how to present a meal, select the wine, and generally act as the butler onboard," says Cosma.

Next Big Thing

Cabins are set to become much more comfortable in the years to come as technologies and emerging materials mature. "We predict the next big thing will be the type of materials used in the interior of an aircraft," says Dixon. "More dynamic materials will be incorporated, such as composites." Andrew Winch Designs are also working on making flights an unforgettable experience for passengers. "By incorporating exterior cameras, passengers are able to sit in the comfort of their armchair yet have a bird's eye view. Installing cameras at the back of the cockpit allows them to experience flying through the eyes of the pilot."

Whatever the future holds, travelling by private jet is set to become far more comfortable and exciting. Who knows, you may come to find the cabin more relaxing than home or the office. ■



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