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NICHE MARKET: TRANSPORTATION

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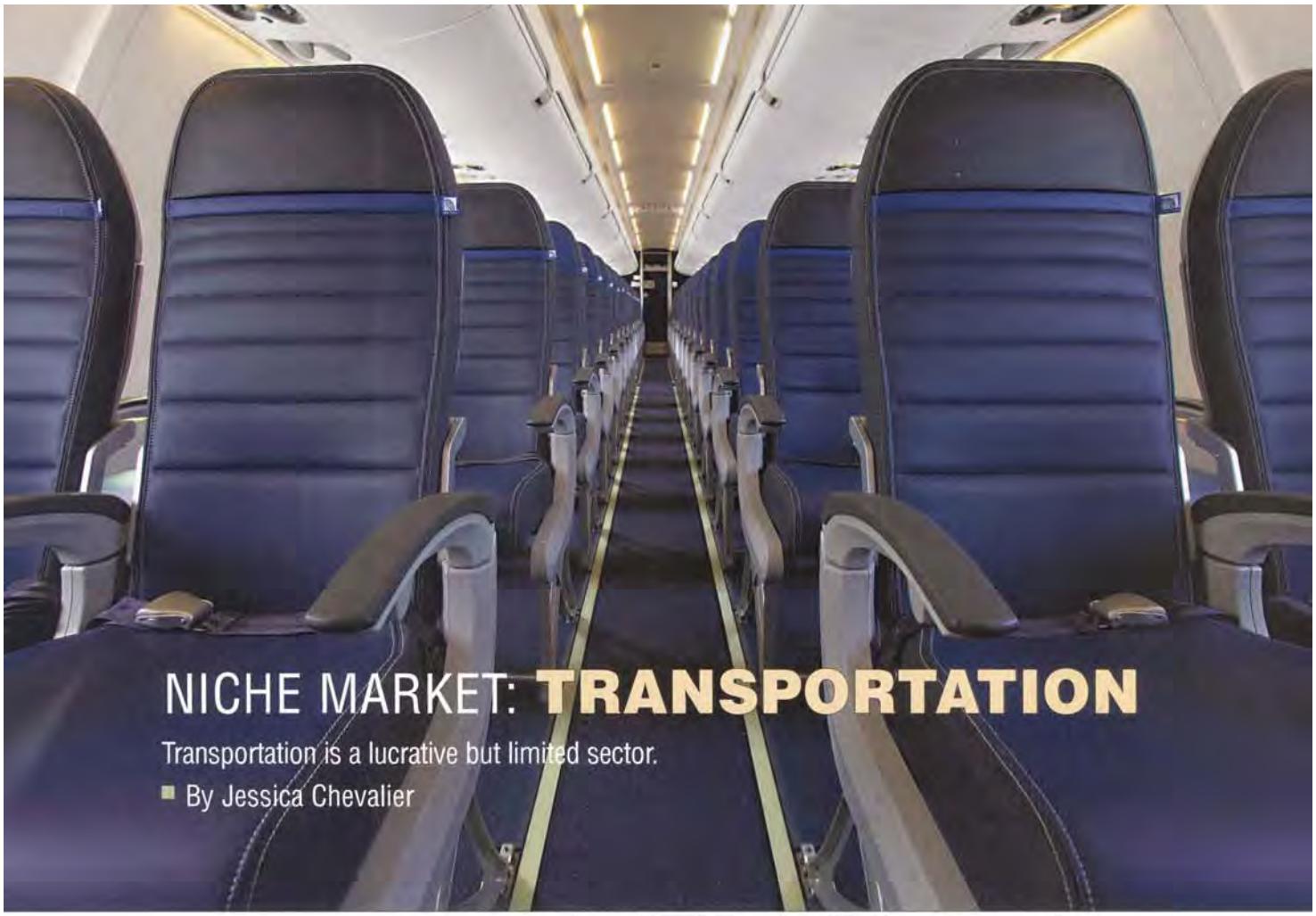


NICHE MARKET: TRANSPORTATION

Transportation is a lucrative but limited sector.

By Jessica Chevalier

United seeks floorcovering that is lightweight, long-wearing and cost-effective for its aviation fleet. Pictured here is one of the carrier's Bombardier CRJ-700 aircraft.

Niche businesses can provide steady and enduring secondary revenue streams for manufacturers who are willing to expend the effort to land and establish them. Often, once these are set up, they can run in a fairly streamlined and painless fashion, especially if the product offerings for the market are narrow. So it is with flooring for the transportation sector. Today, several flooring manufacturers are enjoying strong margins on business earned from relationships established decades ago in this niche market, and thanks in particular to rapid replacement cycles for flooring in commercial aviation, business is brisk.

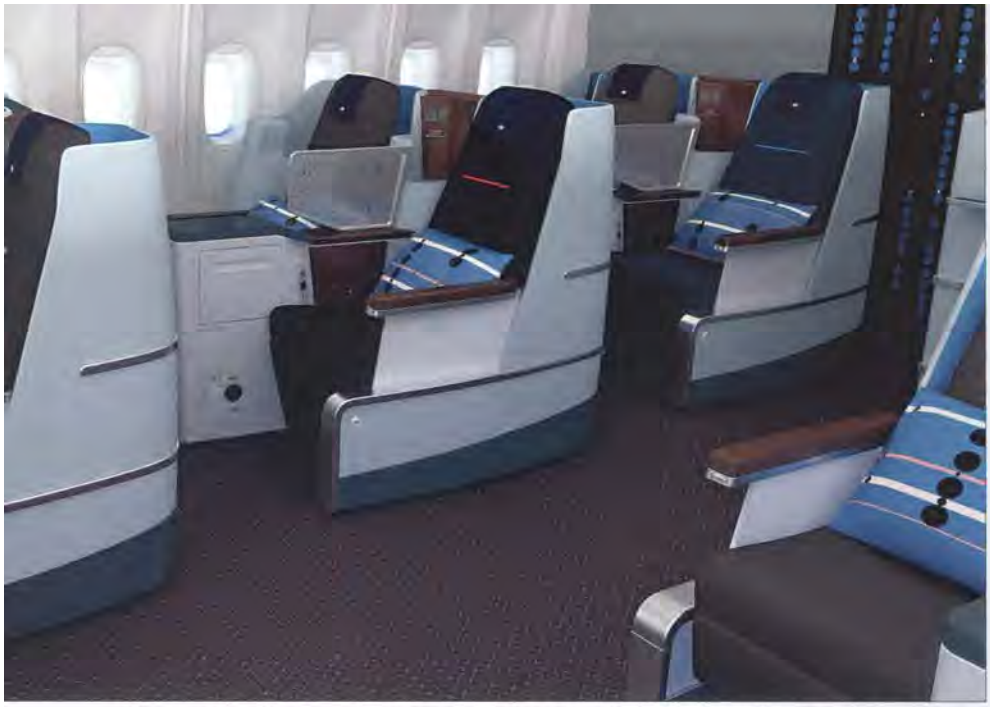
The transportation sector is a varied market that encompasses both private and mass transportation vehicles. Flooring products for this sector are sourced from a variety of manufacturers, both within and outside what we traditionally consider the flooring industry.

For those within the flooring industry that participate—including Mohawk, Lonseal, Mannington, Dixie's Fabrica, and Tarkett's Desso—the transportation market represents an active and rewarding niche business; however, consider that even the largest of vehicles represents a fairly small amount of square yardage, and it quickly becomes apparent how limited this market actually is.

As one might expect, transportation market flooring varies significantly for private vehicles versus commercial, passenger-carrying fleets. Flooring for commercial vehicles must meet stringent burn requirements, established by the various agencies regulating them, while carpet for private yachts, for instance, is unregulated. Private planes are regulated, though much less stringently than commercial airline fleets.

AVIATION: PRODUCT REQUIREMENTS

Commercial aviation fleets utilize two types of flooring: carpet and vinyl sheet. Both of these products must meet Federal Aviation Administration requirements for flammability, as well as other requisites, including factor of sliding friction, smoke resistance and toxicity.



This carpet by Desso, designed in co-manufacturing with Hella Congeries, is used throughout KLM's World Business Class' long-haul fleet. The 100% wool construction is made with Norwegian Cradle-to-Cradle certified wool in a mix with re-used yarns. The dot pattern matches the cabin crew's uniforms.

Of course, airlines have their own list of requirements as well. "United looks for flooring that will save weight while increasing durability, reducing fuel consumption while maintaining quality," reports the airline. "Various teams work together to make sure we select the best product for our fleet, with considerations for durability, weight and cost. During the selection process for carpet and non-textile floorcovering (NTF), materials are tested to see how they would perform in our aircraft's environment. We perform various slip tests to make sure we maintain a safe working environment for our crews and test materials for ease of installation and the welding of the seams for the NTF material. Our aircraft original equipment partners have their own requirements that the suppliers must meet to be installed at the factory, such as material shrinkage, puncture resistance, color pattern, and retainment. As we look toward the future and reducing fuel consumption, we look for construction and material techniques that save weight but maintain other important attributes."

Like United, standard commercial aircraft utilize both carpet and NTF or, as we call it, sheet vinyl. The vinyl is used only in the cockpit, galley areas, entry and lavatories, according to Gregg Nord, sales manager, manufacturing specialty sales for Lonseal, while the carpet is used throughout the seating area.

Because wool chars rather than burns, it long stood as the fiber of choice for applications with strict flammability requirements. And, as such, wool was traditionally used for aviation applications. However, according to Esli Wessels, business segment manager aviation for Desso, the market has shifted in some regard. "We started with mainly wool, and through the years, developed nylon into a Wilton woven construction," says Wessels. "Nylon is lighter and cheaper than wool, and there is a growing demand for nylon. Worldwide today, wool accounts for about 40% of the market; nylon for 35%; and wool-nylon blends for 25%. The amount of blends used—mainly 80% wool, 20% nylon—has increased significantly the last two years." In terms of construction, the aviation sector exclusively uses Wilton.

But how can nylon, an oil-based product, pass flammability testing? "Fire retardancy is the most critical component of aviation carpet," Wessels explains. "Wool is naturally flame retardant, so there is a different approach for creating flame retardancy with nylon. We have to add more flame retardants into the backing." Interestingly, because wool is naturally absorbent, it more readily adheres to the latex backing, while nylon requires more latex. Even with the additional latex, the finished nylon carpet still weighs less than wool. Vinyl flooring must also meet the burn requirements.

David Sandiford, manager of transportation sales for Mohawk Group, explains his company's approach, "In aviation, we have to burn the carpet in a 1,550 degree minimum flame for 12 seconds [called the vertical flame test]. Historically, wool was the product that would meet that requirement. Mohawk brought nylon into the market and had technology that would allow that fiber to meet the vertical flame test. In doing so, we got majority share of the U.S. market. About 15 years ago, we worked with a company to develop a technology to ensure that the carpets not only meet burn requirements of the FAA but also meet certain smoke density and toxicity requirements that companies like Boeing and Airbus demand and that helped grow our international business."

In addition, dimensional stability is important. "Taking aircraft from the ground to 35,000 feet in minutes, the temperature change within one flight is huge," explains Nord.

AVIATION: NAVIGATING THE MARKET

Because of these special chemistries and characteristics, the aviation carpet business has a higher barrier to entry than other niche markets. Add to that the fact that airline consolidation has, to some extent, narrowed the scope of the market, and it becomes clear why a lot of flooring manufacturers don't jump into the business. "The airline business has grown tremendously over the time that I've been here, and it has changed a lot," says Sandiford. "There has been a lot of consolidation. The three major carriers in the U.S. used to be six. AirTran was gobbled up by Southwest. It's happened in Europe too. In the international market, we see a lot of smaller guys coming in."

While major world events—such as 9/11 and the Arab Spring movement of 2010—have the power to negatively impact air travel rates, the outlook for the sector is very positive. "Airbus and Boeing's future outlooks predict that every 50 years this market will double in size due to global population growth," says Sandiford. "This is mainly driven by the Middle East and Asian countries like China, the Philippines

The FAA requires regular maintenance checks on planes, dictated by mileage. Wessels explains that plane checks are labeled A, B, C and D. A-checks take place almost daily. "Flooring is replaced with C-check, about every 18 months or 2,000 or 6,000 flight miles—depending on whether the plane is short- or long-haul." Other experts report that flooring replacement cycles are sometimes extended to 36 months.

At the C-check, the interior of the plane—including the flooring—is ripped out and replaced, whether or not it has reached the end of its useful life. Says Sandiford. "Aisle panels are replaced on an as-needed basis, typically every one to two years. With aisles, you're basically guaranteed to know the foot traffic. A 737, for instance, holds around 150 people, walking down to enter and up to exit, plus the airline staff and the rolling carts." Wessels reports that aisle flooring is replaced as often as twice annually.

While those replacement cycles may seem excessively short, it's worth noting that airline flooring is rarely cleaned. According to Nord, flight crews don't even have a tool for cleaning flooring on the aircraft during flight. Instead, he jokes, "Spills are cleaned up with Kleenex and Bombay Sapphire." However, he adds that "the cleaning crews in the evenings do a fair job." In fact, Desso reports that it isn't recommended that airlines wet-clean its carpet at all. Add to that the fact that airlines simply don't want to ground a plane long enough to properly clean the carpet.

While it may seem, at first blush, logical to go with a vinyl surface throughout a plane, airlines prioritize soft surface's ability to soak up spills—no one wants to see a flight attendant go slipping down the aisle with a galley cart in tow, after all.

One interesting fact to make note of with regard to aviation work is that the square yardage of flooring per plane is minimal. A 737, for instance, requires around 110 square yards of carpet, according to Sandiford, so even if American—the U.S. carrier with the largest fleet—brings down 10% of its planes annually (95.6 planes) for overhaul, that is just over 10,000 square yards of installed carpet. And, according to Nord, the amount of hard surface flooring on a commercial aircraft is only around 20 square feet. That may make the aviation market seem like a lot of work for a little reward, but, as Sandiford points out, "One of the nice things about aviation is that it is very much akin to hospitality—an annuity market."

Sandiford notes that one critical aspect of servicing this segment is ensuring available product. "Airlines don't like to have what they refer to as AOG (aircraft on ground). When a plane isn't flying, it isn't making money. The airlines want planes up and in service. When a plane comes in for an overhaul, for instance, they pull out the seats and have another set there ready to go."

Along those same lines, he believes that one of the challenges in the business can be selling quality; after all, warranties mean little to airlines, as they expect to pull out the flooring before the end of its useful life. For that reason, pricing is highly competitive, and upfront cost plays a significant role in decision making, though Sandiford argues total cost of ownership should carry more weight, especially considering that a failed flooring that cost $0.50 less per square yard on the front end still means AOG hours.

AVIATION: DESIGN

As one might expect, commercial airline fleets prefer to utilize custom looks that reflect their brand, but these aren't bold, statement-making designs by any stretch. "This is a very conservative market," says Wessels. "Always Wilton. Color-wise, it may be a bit dull: dark grey or blue with a bright spot or a line maybe. There is innovation in the products, but it's more about the yarn, the latex backing than the look of the final product."

While most commercial aviation carpets are custom, Mohawk has launched a collection of four products—in two to six colors each—for general aviation, the charter market or airline startups. These may also be utilized by companies that own and lease aircraft to airlines.

Style-wise, Wessels notes a bifurcation of the market currently. "For local carriers, the growing demand in carpet is for product that is not best in class quality-wise, but something that is cheap and will last 12 months," he says. "For five-star airlines, we do see they are focusing on cabin and passenger experience, and the interiors are a real chance to create a certain mood for passengers. They ask us to work closely with their design teams and to create tailor-made carpet with a luxury appearance that is in line with the other textiles and wall materials."

Nord reports that for vinyl flooring, the standard is a raised circular coin pattern. Currently, some airlines are looking for wood, linen or non-directional looks, however. As with carpet, the major airlines like to customize their vinyl as well.

One innovation Desso has worked on diligently with regard to its aviation carpet is the reduction of weight, which is a driving concern in the sector, because less weight means reduced fuel usage and, therefore, cost savings. "We have been testing for a couple of years a carpet that is between 1,000 and 2,000 grams per square meter [30 to 60 ounces per yard]," says Wessels. "The majority of what's used currently is 1,600 to 1,700 grams per square meter. Desso has been able to produce a 1,090 gram per square meter carpet that offers a certain level of saving in fuel; it's called Stratos FuelMaster. The variation in weight depends on the design and the amount and type of yarn used."

Sandiford adds, "When it comes to airlines, manufacturers have to pay a penalty if their products come in over weight. The airlines—while they care about face weight as it relates to durability—care more about the total weight of a product. When I started at Mohawk, the total weight of carpets averaged around 52 to 55 ounces per square yard. Today, we average 40 and 44 ounces per square yard—and that is total weight, not face." Mohawk Group's aviation products are manufactured in Eden, North Carolina at its Karastan plant.

There is an interest in sustainability among airlines, especially elements that can help them tell a green story. That being said, none of the manufacturers with whom we spoke report that airline flooring is recycled after its use. Desso points out that, due to the latex backing, it will be challenging to ever develop a cradle-to-cradle process for aviation carpet. Lonseal is searching for a recycler for its end-of-use aviation vinyl and is doing testing but believes it may find that the process is cost prohibitive. ■

LUXURY CARPET FOR LUXURY YACHTS

Luxury carpet brand Fabrica has been serving the yacht business for two to three decades, the leadership of Fabrica having formed strong relationships in the industry years ago.

The pairing makes a lot of sense, explains TM Nuckols, president of Dixie Residential, "Yachts are a luxury segment, and Fabrica is a luxury product, so it's a good fit in terms of expectation, design, aesthetics and quality." Nuckols points out that the products used in yachts are as high in quality as those used in luxury residences.

The carpet that Fabrica sells for yacht use is both wool and nylon 6,6 in a range of constructions, including cut pile and loop. The company offers its standard luxury products for use in the sector as well as custom designs and constructions. For private yachts, these products require no special performance or regulatory traits.

"Yachts continue to be an active segment for us, and designers who work in the segment have come to rely on us," says Nuckols.