

mobileTex

NEWS OF THE GLOBAL TRANSPORT TEXTILES INDUSTRY
— AUTOMOTIVE, AEROSPACE, RAIL, MARINE —

Aircraft interior fabric supplier bankrupt

AFTER nearly 200 years of trading, the famous Aabe name has disappeared. The renowned wool fabric factory, which was founded in 1811 as Beka in Tilburg, the Netherlands, went into administration at the end of September, reportedly owing to the crisis in the global aircraft sector.

Earlier, in 1996, the company also went bankrupt, but was revived on a smaller scale. Initially, the transformation of the former woollen blankets producer to a manufacturer of technical textiles, including furnishing and flame-retardant fabrics, especial-

ly for aircraft, was successful, but the company became too dependent on the aircraft market to survive the downturn in this sector.

Up until the 1970s, Aabe was a well-known supplier of woollen blankets, employing at its peak around 1,250 workers. In the 1950s, almost every car in Holland had a wool blanket in the back, many with the Aabe brand.

However, the rise of duvets reduced the blankets business dramatically, and a series of reor-

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Toyota iQ has nine airbags

TOYOTA'S new iQ super mini-sized car, which was launched last month, is equipped with nine airbags to protect passengers from any direction of impact. These include the world's first rear window curtain airbag (see *MobileTex*, November 2008, page 5).

The ultra-compact car has a 1-litre engine and is 2.99 metres in length, 1.68 metres wide and 1.5 metres in high, which makes it



the world's smallest four-seater, able to hold three adults and one child. It has a turning circle of just 3.9 metres and a fuel efficiency of 23 km per litre.

Toyota has started production of 2,500 cars a month at its Takooka plant in Japan and has set a price of ¥1.4m-1.6m (US\$14,300-16,400), depending on the specification. The company plans to export to Europe 70,000 cars annually from 2009.

www.toyota.co.jp



Growth for railway cushion fibre product

Teijin Fibers forecasts stronger polyester fibre and nonwovens sales to the cushion product market in 2009. The company has sales of 150-200 tonnes a month to this segment, but plans to double this volume next year.

In Japan, cushion material for trains, such as the Shinkansen N700 bullet train, has highlighted new textile applications, such as breathable products that are 30% lighter than polyurethane, with use extended to other trains.

Major products for cushion end-uses from Teijin include the cubic crimped polyester fibre Polity, the polyester fibre Elk and the polytrimethylene terephthalate fibre Solotex, as well as V-Lap nonwovens.

www.teijin.co.jp

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APM system from IHI

IHI develops new transportation system

IHI of Japan in collaboration with HFG of South Korea has developed a new one-step moulding system with a carbon fibre-reinforced composite for transport applications, such as an automated people mover (APM) transit system.

With this technology the weight of train bodies, for example, can be reduced, compared with existing stainless steel materials.

The system permits larger windows and can also contribute to fancier design possibilities.

Carbon fibre is incorporated within a moulded 2 mm thick resin sheet with a 3 mm thick aluminium honeycomb frame.

The new process can reduce the weight of the structure by at least 10% while maintaining the same level of strength and heat resistance as the stainless steel welding process.

www.ihico.jp

www.mobile-tex.com

Aircraft fabric supplier bankrupt

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organisations prevented the failure of the company — at its low point in the 70s, the local catholic church had to pay the workers' wages for the company to survive.

After the 1996 bankruptcy, Aabe was revitalised under the leadership of former director Ted van der Linden. Together with four other financiers, several million Dutch guilders were invested in new weaving machines under the new name AaBe Textiles.

Van der Linden successfully transformed the company into a supplier of customised aircraft interior textiles, including seat fabrics, curtain materials and ready-made pleated curtains, as well as carpets, dado panel materials and aviation leather.

AaBe Textiles supplied to 135 airlines worldwide, gaining a position as a qualified supplier of interior textiles to Boeing and an approved supplier to Airbus.

The company's in-house laboratory and finishing department specialised in meeting the stringent properties required for aircraft textiles, such as flammability, smoke density, toxic gas emissions, heat release, etc.

The strength of Aabe Textiles was at the same time its weakness. By the end of its transformation process, the company was over-dependent on the aircraft sector; which accounted for some 70% of its production.

This vulnerable position came to light in the crisis in the aviation sector that followed the attack on New York's World Trade Center in September 2001.

As a result, the company de-

ceded to reinforce the manufacture of interior products for the contract furnishing sector, including curtain materials and upholstery fabrics, and tried to revive its former blankets business.

For this purpose, AaBe bought a number of yarn and fabric dyeing machines from a business partner in the Netherlands, and the company was therefore able to produce small runs for quick response. At the same time, it invested heavily in new collections and marketing.

Meanwhile, the company ownership had changed with Van der Linden having sold his shares and retired from the company in 2004.

Two years later, AaBe Textiles entered into a licence agreement with the UK's Firestop Chemicals for the use of Noflan flame retardant finish.

Unfortunately, this transformation process came too late for the company to survive the latest crisis in the aircraft sector. At the end, AaBe Textiles had debts of almost EUR1m (US\$1.3m) and 38 employees lost their jobs, it is reported.

According to the official receivers, it was the costs involved in the aircraft sector that caused the company's failure, considering the length of time between initial contact and final contract and the high costs involved in testing.

The "leg" of the aircraft industry was too small for AaBe Textiles, he said.

However, it is rumoured that the Aabe brand name may resurface, having been sold by the receivers to an unknown company for marketing purposes.

www.aabe.nl

www.firestop.uk.com

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Airbags market to top 211.3m units by 2012

THE global automotive airbags market is projected to exceed 211.3m units by 2012, representing a compound annual market growth of 5.5%.

According to a new Global Industry Analysts report, Europe is currently the largest automotive airbags market and is projected to reach 63.6m units by 2010. Asia-Pacific is the world's fastest growing market and is projected to expand at a compound annual growth rate (CAGR) of nearly 21.7% over 2000-10.

Front-impact driver airbags is the largest product segment and is forecast to reach 70.8m units by 2010. The US, Canada, Japan and Western Europe have reached 100% penetration rates for such airbags.

As a result, most of the growth in this segment can only be expected from incremental vehicle sales.

The side-impact airbags market is the fastest growing segment and is projected to register a CAGR of 13.7% between 2000-10.

Buoyed by tightening regulations and growing customer awareness, the automotive airbags market is bracing for strong growth in the coming years, the company states.

Automobile manufacturers are on a constant lookout for new technologies and systems that can effectively enhance their competitiveness in this era of globalisation.

Some of the major factors driving growth of airbag installations include regulations, awareness, introduction of sophisticated systems, such as side impact airbags, increase in safety concerns, launch of safer products and competitive dynamics.

Cars in the future are expected to be equipped with "smart airbag systems", which create an integrated "occupant protection" or "motion control" system.



Smart systems sense an impending crash, its nature, the presence of occupants, their position, and determine the type of airbags to be fired and the force and speed of their deployment.

The near saturation levels in large automobile markets in developed countries are shifting the focus of automobile makers and large automotive parts suppliers to emerging automobile markets in developing countries.

This is consequently leading to an increasing number of foreign collaborations, technical tie-ups and foreign investment in developing economies.

The report *Automotive Airbags: A Global Strategic Business Report* provides a comprehensive review of market trends and issues, product classification, product introductions/innovations and recent industry activity.

The study analyses market data and analytics in volume sales for the period 2000-15 by the following segments: front-impact driver airbags, front-impact passenger airbags, side-impact airbags, and other automotive airbags.

Regions covered in the report include the US, Canada, Japan, Europe, Asia-Pacific (excluding Japan), Latin America and rest of world.

Major market participants profiled include Autoliv, Delphi, Denso, International Textile Group, Key Safety Systems, Takata, Toyoda-Gosei and TRW Automotive.

www.strategyr.com

Takata reduces operations by 10%

Takata of Japan has disclosed that it will reduce production by around 10% in both the US and the EU owing to the recession in the automobile industry. The company operates 31 plants in these markets, where it plans to close three facilities.

Takata will also reduce the workforce by 3,000 in the second half of its fiscal year, which is projected to save ¥3bn (US\$30m). The company's major business — airbags — is forecast to reduce substantially in both regions.

www.takata.co.jp

Icahn sells Lear shares



Investor Carl Icahn (left) has reportedly sold 8.5m shares in Lear Corp, leaving him a total of 3.83m shares (about 5%). The US billionaire, whose efforts to take Lear private in 2007 were rebuffed by shareholders who rejected his US\$37.25 per share offer, has now sold more than two-thirds of his stake in the US automotive supplier to realise capital losses before the end of the year. However, he said he was still supportive of the company's management.

www.lear.com

YRC suspends tyre project in China

Yokohama Rubber is to suspend its 1m passenger car tyre expansion project in Jiangsu, China. An official said it is unlikely that the forecast of 10m sales in China in 2008 will be achieved. However, the expansion programme for bus and truck tyres remains on track as continuous growth has been seen in this segment.

www.yrc.co.jp

World's fastest-growing aviation market

In its 2008 Current Market Outlook for the China region, aircraft builder Boeing forecasts a market for 3,710 new airplanes worth about US\$390bn over the next 20 years.

Chinese air travel and air cargo market growth will cause the country's fleet to more than triple to 4,560 airplanes by 2027 — about as many planes as are in Europe today.

Single-aisle planes will account for 70% of the new purchases, driven by the world's fast-growing domestic market.

Single-aisle aircraft such as the Boeing Next-Generation 737 will be the largest category, with 2,600 new airplane deliveries.

Demand for intermediate twin-aisle aircraft, such as the Boeing 787 Dreamliner and 777, will result in approximately 780 airplane deliveries.

When combined, the single-aisle and intermediate twin-aisle market will make up 91% of China's total delivery by value.

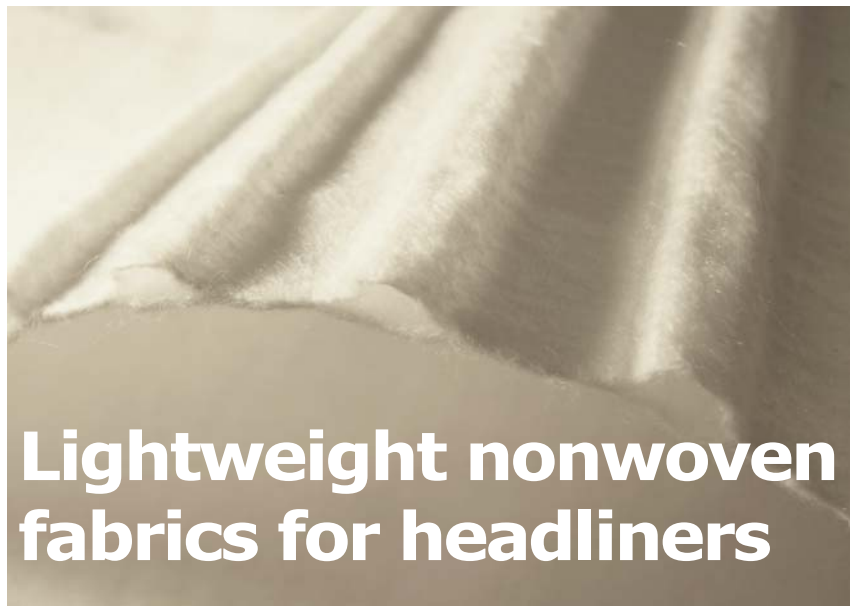
Demand will include a limited number of large airplanes (747-size and larger) to connect China with other major world destinations. The market forecast calls for about 100 airplanes in that category.

With China's cargo markets leading the global industry, Chinese air carriers will add about 370 freighter airplanes by 2027, quadrupling its total freighter fleet size.

The Boeing 2008 forecast indicates continued strong fundamentals underlying the need for new airplanes, including economic growth, world trade, aviation market liberalisation and new aircraft capabilities.

Worldwide, Boeing projects investments of US\$3.2trn for 29,400 new commercial airplanes to be delivered over the next 20 years.

www.boeing.com



Lightweight nonwoven fabrics for headliners

AT the 1st Tecnon OrbiChem Polyamide & Intermediates Conference held in October in Düsseldorf, Germany, Matthew Tipper, operations director of the Nonwovens Innovation & Research Institute (NIRI), UK, disclosed a new technology with potential for improving sound absorption characteristics in automotive headliners.

Launched at this year's Index exhibition, Hydrospace (above) is a tubular nonwoven in which micro-cavity channels are formed within the nonwoven fabric.

These cavities, which can be less than 5 mm in diameter, can subsequently be filled (injected) with, for example, liquids, gels, waxes, cosmetics, detergents, solid particles or combinations of these to functionalise the fabric.

NIRI has developed thin Hydrospace materials with improved sound absorption characteristics. These are claimed to have an absorption coefficient 1.8-3.0 times that of a flat product of the same basis weight. The potential for inclusion in headliners is being investigated.

Other applications include wipes for household, medical, cosmetic, baby, industrial and domestic use, and filters for the filtration of blood, air, gas, petrol, chemicals, etc.

Tipper also revealed details of HydroTube, which are lightweight hydroentangled fabrics produced as continuous seamless

tubes. The fabric is formed by hydroentangling then rolling up a narrow nonwoven web, which is then filled with a functional material. Applications of HydroTube include medical dressings, reinforced hoses and pipes, and protective seals.

Hydrospace and HydroTube can be made from virtually any fibre that is compatible with the hydroentanglement process, including natural fibres, such as pulp fibres, cotton, bast fibres, wool and hair etc., man-made fibres or filaments, e.g. polyesters, polyolefins, acrylics, regenerated cellulose and their derivatives, polyamides and aramid fibres. Inorganic fibres such as glass and metal may also be used.

In addition, blends of fibres can be employed and composite or laminated fabrics produced.

Both materials can be made on existing hydroentanglement equipment with a retrofit device, said Tipper. NIRI has worked with spunlace plant manufacturer Fleissner to ensure the technologies are viable and compatible with existing hydroentanglement equipment.

This offers the potential for commercial scaleability of producing products at current manufacturing speeds without the need for heavy investment.

www.nonwovens-innovation.com

www.fleissner.de

www.tecnon.co.uk

Potential for textiles in Brazil

By Milton Bastos of MBB Enterprises with Claudio Teixeira, former industrial manager, Aunde Brasil

BRAZILIAN automotive production started in the late 1950s with the introduction of the VW Beetle. By the 1970s, Volkswagen had more than half of the market share in Brazil.

The market leaders are currently General Motors, Fiat and VW with European-based models. GM uses its German Opel division as a base for product development for Brazil and South America.

In 1997, the total production of automobiles, light commercial vehicles and trucks was a record 1.94m units. Over the next seven years, the production of cars fell short of the 2m unit level as a result of the stagnant economic conditions of that period, while the annual capacity was close to 3m. The 1997 production record was broken only in 2005.

In the 1990s, the Brazilian government introduced a number of tax incentives on "popular" automobiles with an engine size not exceeding 1 litre displacement. That plan even brought back into production the antiquated VW Beetle for a few years, but it could

not resist the competition of more modern car offerings. The no-frills "popular" car could be sold for prices below US\$10,000. (However, it is noted that direct taxes can account for up to 50% of the purchase price of automobiles sold in Brazil.)

The years 2006 to 2008 were another boom period for Brazilian automotive production with double digit growth. This was the result of higher per capita income owing to economic growth and better income distribution, bringing to the market millions from the lower classes, as well as increased credit availability for longer term financing, which made a new car more affordable for first-time buyers.

Total automobile production will reach the 3.1m units in 2008 and is expected to grow by a further 5% in 2009. The industry projects sales of 3.5m units by 2011 and is gearing up for a production



capacity of 4.5m units.

The development of flex-fuel engines, including the 1.0 flex for "popular cars", has been very successful as new car owners can switch from gasoline to pure hydrated ethanol (96%) based on the prevailing price at the pump for both fuels.

The flexible fuel vehicle market share has jumped from 40% in 2007 to 70% in 2008, as pump prices for petroleum-based gasoline increased much more than the green/renewable ethanol made from sugarcane, with lower pollution and greenhouse gas emission levels an added benefit.

The price advantage for the 1.0 flex entry level automobile still accounts for half of all sales, and most auto makers in Brazil have at least one model in this line. This includes the GM Corsa, Fiat Uno and Palio, Ford Ka and Fiesta, and VW Gol (mini-Golf), which is currently the best selling model in Brazil.

The less expensive models use seven linear metres of upholstery fabric with an average weight of 250 g/m².

The automotive industry in Brazil is a mature market with more adequate prices for middle income countries, such as in the rest of Latin America as well as countries in Africa and the Middle East. The flex-fuel engines that were also developed in Brazil also have an export appeal as a green car concept.

Brazilian automobile exports

Brazilian bus industry growing fast

BEING a large country, with long distances to be travelled and served by a precarious passenger intercity rail system network and small urban rail systems (metro-subway-tram), Brazil's mass transportation is mostly made by bus.

The country ranks second to China as the world's largest bus manufacturer. Its bus and light commercial vehicle markets are growing at an even faster rate than the automobile market, with total bus production in 2007 at 32,000 units.

Half of the Brazilian-made bus chassis are manufactured by Daimler's Mercedes-Benz do Brasil. Two of the major intercity/tourist bus producing companies, Marcopolo and Busscar, are located in Rio Grande do Sul, southern Brazil. There is a significant export volume of 10,000 units annually, mostly to service the Latin American and African markets.

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Potential for textiles in Brazil

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have reduced over the past few years with the strengthening of the local currency, the real, which traded as high as BRL1.55 to the US dollar in August and recently trading at BRL2.1. The domestic market share increased as net prices for the auto makers were higher than the export equivalent for the same model.

Over the past decade a number of new producers, such as Renault and PSA of France and Toyota and Honda of Japan, have established plants in Brazil and launched new models, for example the Toyota Corolla, Honda Civic and the new Toyota Project EFC (2010), which will be priced at US\$8,000-10,000.

Automotive fabric suppliers are highly concentrated with Aunde Brasil (Germany-Brazil) having the largest market share with 60%, followed by Michel Thierry (France), Autotex (Milliken, USA), Seiren Produtos Automotivos (Japan) and Dini Têxtil.

Unlike stagnant or declining

markets in Western Europe and North America, the Brazilian automobile market is far from being saturated. The continental dimensions of Brazil (the country is 60% larger than Western Europe and as large as the USA's lower 48 states) encompass extremely long distances to be covered by roads.

In addition, by the next decade Brazil is expected to have a population exceeding 200m and a gross domestic product (GDP) well in excess of US\$1trn, resulting in a per capita income of around US\$6,000. Thus, the potential for automotive market growth is significant.

Brazil has a current fleet of 25m cars and light commercial vehicles, which places the country in the middle stage of the "S" curve of vehicle penetration, well below the saturation levels of more developed countries, such as the US, Japan, Germany, UK or France, but above the early stage vehicle penetration of China and India. The production forecast will exceed GDP growth by a few percentage points every year.

With the trend to larger and/

Brazil: leading automotive textile suppliers

Producer	Monthly production (m linear metres)
Aunde Brasil	1.20
Michel Thierry	0.35-0.37
Autotex	0.22-0.24
Seiren Produtos Automotivos	0.90-0.11
Dini Têxtil	0.03-0.05

Source: MBB Enterprises

or higher valued-added cars there will be an increased unit consumption of plastics and textiles in addition to the volume growth.

Newer models from up to 10 different car producers will also be equipped with additional safety and comfort features, such as advanced safety restraint systems (seatbelts and airbags), improved acoustic and temperature insulation, as well as more appealing and fashionable upholstery fabrics.

www.aunde.com.br
www.michelthierrygroup.com
www.autotex.com.br
www.seiren.com
www.dinitextil.com.br

Toray Automotive Center unveiled

TORAY Industries has opened its new Automotive Center (AMC) in Nagoya City, Japan. The facility is located in an area where more than 50 automobile and parts manufacturers and three aircraft manufacturers are within a radius of 50 km.

The AMC offers facilities for testing, evaluation and analysis of materials and parts that are developed with clients. It also collects the latest information and holds seminars on automotive materials and processing technology.

The main developments are based on lightweight body technology, non-petroleum-based materials, automobile parts for the next-generation car and car electronics.

Initially, the centre has 20 research staff and equipment includes a 1,000 tonne injection moulding machine, a robot painting unit, a film decoration facility, a large-scale hot and cold impact machine, durability test equipment for large parts, a humidity and temperature controlled laboratory, a non-destructive tester, various dynamic function testers and a specific fluidity simulation tester.

A priority task for the AMC is the practical development of carbon fibre-reinforced plastic (CFRP) for the automobile platform using high-efficiency thermoplastic resin in combination with innovative high molecular and organic chemistry and nanotechnology.

Toray has established a set of automobile and aircraft materials as a priority for its management programme to 2010 and the AMC will take a leading role in this task in collaboration with the Strategic Promotion Department of Automotive Materials.

In a further development to strengthen its advanced composite programme, Toray will transfer both its FRP composite development at the Ehime plant and the FRP technology department at the Shiga plant to Nagoya by April 2009 to form an Advanced Composite Center (ACC).

Then the AMC, ACC and existing Resin Applications Development Center in Nagoya will be unified as the Automotive & Aircraft Center (A&A).

www.toray.co.jp

Developing lightweight and long-lasting aircraft seating

THE main theme of the IIR Aircraft Seating conference held in October in Hamburg, Germany, was reduced weight of seats and of other cabin interiors as a result of recent increases in oil prices. Jet fuel currently constitutes around a third of airline costs, surpassing labour costs of about 25%.

It is estimated that the cost of flying one additional kg/year can vary between US\$80 and US\$8,000, depending on the flight schedule, aircraft, whether this is going to result in a saving or will be used to generate additional revenue by extra passenger and/or freight capacity increase.

According to Boeing's Ralph Heinze, the general trend is toward higher jet fuel costs, with wide intermediate price variations.

He also mentioned that by introducing improved technology since 1950, Boeing has managed to achieve a 70% improvement in fuel consumption and a 90% reduction in noise footprint of its aircraft.

The company regards the

introduction of the aviation carbon tax as an opportunity rather than a challenge.

Business class downgrade

Regarding trends in aircraft seats, it is expected that the number of premium economy fares will increase as more business passengers downgrade from business class.

An example of premium economy seating is eight abreast in a B747, compared with six and 10 abreast in business and economy, respectively. In the case of economy class it is important to develop seats with improved pitch rather than width, according to many passenger surveys.

The conference heard that the life of a cabin interior and a business class seat for high-quality carriers, such as Singapore Airlines and Emirates, is estimated at 6-8 years, while for other carriers it is about 12 years.

Meanwhile, Swiss International Air Lines is pursuing a policy of becoming a boutique airline within the Lufthansa Group with

the marketing of "Swissness", according to Paul Estoppey of Swiss International. Because of the airline's passenger profile half of the aircraft area is occupied by business seats and the other half by economy seats.

To maintain the business class clientele, which includes a large proportion of non-Swiss passengers, the airline is introducing a new business cabin layout with seats designed by Thompson Solutions, where only one out of nine passengers does not have direct access to the aisle and passengers in the next forward row are seated slightly sideways to the row behind, to improve comfort.

Swiss' new fully flat business class seat will use Lantal Textile's fully pneumatic seat cushion, which has two independent motors operating the body and leg support separately.

The pneumatic cushion plastic seat envelope is protected by a Kevlar/Nomex felt against fire and vandalism, with a wool-rich seat cover on top.

The new seat, which will come into service in the airline's new Airbus A330 aircraft in April 2009, weighs 70 kg compared with 73.7 kg for the existing angled business class seat, which employs a fire retardant (FR) foam.

Continuing the trend towards lighter products, Metzeler Schaum of Germany is launching a new FR foam called Metzoprotect NG that is 30% lighter than the present Metzoprotect FRM product. A new viscoelastic memory foam is also available to reduce pressure on the legs and thus the risk of deep vein thrombosis (DVT).

James Lang of Andrew Muirhead, UK, summarised the ad-

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Integrated child seat for passenger airlines

At present, seats for children and infants are not strictly regulated. Lufthansa Technik has developed an integrated child restraint system called AeroKid. Harald Mersensky explained that this can be located over a triple Recaro seat, which allows the parent to sit in the middle, without interfering with the use of this seat for adults.

It is expected the seat will be approved by the European Aviation Safety Agency (EASA) by the end of this year. The seat is 4 kg heavier than conventional ones, and it is estimated that scheduled carriers will have 5% of these seats available, with charter operators 8-10%.



AeroKid allows safety for babies, children and adults. Photo: Lufthansa Technik

Stork Fokker signs composites contract

Stork Fokker and Airborne Composites have signed a seven-year contract for the engineering and manufacturing of composite overhang panels for the empennage of the Gulfstream G650 aircraft. The composite overhang panels are part of the empennage wing surfaces and are made of carbon-fibre epoxy with a honeycomb sandwich.

Within the contract, ship sets containing 38 different panels will be delivered as part of the Stork G650 empennage programme. Airborne Composites will design the product as well as the tooling. The first ship sets will be manufactured in The Hague facility in the Netherlands. From 2010, the series manufacturing of the panels will be transferred to the sister organisation in Catalunya, Spain.

This G650 overhang panel contract is the first complete design and build package that will be subcontracted from Stork to Airborne, after years of successful teaming regarding engineering services and manufacturing development programmes.

Part of Stork Aerospace, Stork Fokker is responsible for the design and manufacturing of the empennage of the G650 aircraft of US aircraft builder Gulfstream Aerospace. This business jet, with its ultra-large cabin and ultra-long range, will be the new top-end model of the Gulfstream business jet family. Since 1993, Stork Fokker has participated in the GV programme of Gulfstream.

www.stork-aerospace.com
www.airborne.nl
www.gulfstream.com

Lightweight, long-lasting seating

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vantages of leather seats in terms of extended life and easy maintenance. However, he did not address the question of its high weight (it is about twice as heavy as textile seat covers) and inferior seat comfort because of the surface impregnation of leather with polymers that impede thermo-physiological comfort (i.e. moisture transportation through the seat).

Ideally, a textile should be used where the body is in intimate contact with the seat, while leather can be used as a decoration on the seat contours.

Ben Orson of James Park Associates, UK, noted that catalogue supplies of seats and other textiles, which are imposed by Boeing and Airbus, require supply within four months from order. This means that seat covers, leather, carpets and other textiles will have to be provided from already certified stock; customisation will not be allowed.

To address this, the company offers a bespoke service for the development of super first, business premium, premium economy and economy designs for leading carriers that compete through differentiation.

Kerosene burner test

The Federal Aviation Administration (FAA) is preparing a policy letter to be published by the end of this year that would allow a higher weight loss in the kerosene burner test for lighter seat assemblies, with which it is more difficult to meet the 10% weight loss limit.

Presently a 2 kg seat assembly can have a maximum weight loss of 10% (200 g) in this test, while a 1 kg or 0.5 kg seat assembly only 100 g and 50 g, respectively, which might be difficult to comply with. This fixed 10% maximum weight loss ruling will impede the introduction of lighter

seat assemblies.

A recent inter-laboratory evaluation organised by the FAA, involving eight laboratories in North America and eight outside this area, showed wide discrepancies in the kerosene burner test results.

This has led the FAA to introduce a next-generation burner for the seat assembly test, effective from September 2009, that will provide similar but more reproducible results to the present Parker burner, according to Patricia Cahill of the FAA William J Hughes Technical Center, Atlantic City, New Jersey, USA.

The FAA believes that measurement of toxic gases is a waste of time as the priority is to prevent a fire. In this case, the primary parameter is heat release. If the material is fire hardened there is no need to be worried about toxic gases.

www.aviation-conferences.com
www.boeing.com
www.swiss.com
www.thompsonsolutions.co.uk
www.lantal.com
www.metzeler-schaum.de
www.muirhead.co.uk
www.jpadesign.com
www.lufthansa-technik.com
www.recaro-as.com
www.easa.europa.eu
www.faa.gov

Aramid tyres for ANA

ALL Nippon Airway (ANA) will use the Bridgestone RRR radial aramid tyre for its new Boeing 777-300ER aircraft. The tyres will be applied to all 13 aircraft starting in October 2009.

Aramid tyres are said to be durable and strong with a considerable weight advantage. Replacing the 12 tyres on each of these aircraft will reduce aircraft weight by 80 kg and thereby save an annual 105,000 litres of fuel for the 13 aircraft, according to an ANA official.

www.ana.co.jp
www.bridgestone.co.jp

Start-up of Zoltek's Mexican plant

ZOLTEK Companies reports the start-up of acrylic precursor and carbon fibre manufacturing operations at its Zoltek de Mexico facility. The company acquired a textile acrylic plant in Guadalajara in October 2007 that had been idle since early 2006. Zoltek has retrofitted the plant to produce acrylic precursor and installed four continuous carbonisation lines.

The company estimates the facility could ultimately produce 60,000 tonnes of precursor material a year which, in turn, would support the production of more than 27,000 tonnes of carbon fibres.

Zoltek also announced that it generated record sales for its fourth quarter and for the full year. The company expects to report revenues of approximately US\$51m and US\$186m for the quarter and full fiscal year ended 30 September 2008, respectively, representing increases of 17% and 23% compared with the previous year.

Zoltek remains optimistic in its outlook for fiscal 2009 and beyond. The company continues to believe it can achieve sales of US\$500m by fiscal 2011.

Zoltek is actively pursuing sales of carbon fibre to leading airplane makers for use in secondary structures, such as floors, luggage bins and seats.

The company also believes automotive applications are destined to become the largest user of carbon fibres. For years there has been an upward trend in the use of carbon fibre-reinforced composites in the manufacture of small-volume and hand-made cars.

Examples include the Tesla, which uses Zoltek fibres for the entire car, and Corvette, which uses Zoltek carbon fibres for a few special parts.

www.zoltek.com

Autoliv lowers full year estimates

AUTOMOTIVE safety systems supplier Autoliv has predicted a fall in its fourth quarter and full year sales as production cuts continue to hit the North American and West European automotive markets.



In releasing its third quarter results, Autoliv said the latest forecasts from JD Power and CSM indicate a decline of 7% in global light vehicle production for the fourth quarter. This includes production cuts in North America and Western Europe, where Autoliv derives 70% of revenues, of 19% and 13%, respectively.

"Based on these uncertain assumptions, the indication for the fourth quarter is an organic sales decline in the order of 12% which is better than the forecast average change in vehicle production in North America and Western Europe," the company stated.

In its third quarter, Autoliv reported a fall in consolidated sales of 1% to US\$1.55bn, while organic sales decreased by 7%. Operating income for the quarter was US\$58m, operating margin 3.8%, income before taxes US\$47m and net income US\$31m.

www.autoliv.com

Johnson Controls reports record results

JOHNSON Controls reported record sales of US\$38.1bn for its 2008 fiscal year, up 10% from US\$34.6bn in 2007, reflecting growth in the company's Building Efficiency, Power Solutions and Automotive Experience busi-



nesses. Net income for the year totalled US\$979m.

Segment income, which excludes the previously announced US\$495m restructuring charge, increased by 10% to US\$2.1bn against US\$1.9bn last year. Excluding the charge, net income totalled US\$1.4bn, up 8% from US\$1.3bn in 2007.

For the 2008 fourth quarter, the company reported record sales of US\$9.3bn, an increase of 3% compared with US\$9.0bn last year as a result of higher Building Efficiency and Power Solutions revenues. Net income was US\$16m.

Automotive Experience sales in the quarter were US\$4.1bn, 2% lower than US\$4.2bn in 2007. North American sales decreased by 12%, less than the overall industry vehicle production decrease of 17% owing to the incremental revenues associated with the Plastech joint venture.

European sales increased by 4%; however, excluding the impact of currency, sales decreased by 6%, approximately in line with industry production. Sales in the Asia/Pacific region increased by 8% due to higher volumes in Japan.

Segment income was US\$147m, down 20% from US\$183m last year. The decrease reflects the impacts of the lower North American volume, the costs associated with Plastech and higher launch costs in support of new automotive interior programmes, which more than offset significant improvements in operating performance globally.

For the first quarter of fiscal 2009, the company expects a loss in the Automotive Experience business as a result of sharply lower automotive production in North America and Europe and the costs associated with restructuring initiatives.

The company forecasts that its automotive results will improve sequentially throughout the year

as vehicle production stabilises, commodity prices decrease and cost reductions gain momentum.

www.johnsoncontrols.com

Faurecia revenues up 1.7% in third quarter

AUTOMOTIVE parts supplier Faurecia reported consolidated sales for the third quarter of EUR2.86bn (US\$3.64bn), an increase of 1.7% on the same period of 2007. In the first nine months of the year, sales rose by 2.4% on a like-for-like basis excluding monoliths.



In Europe, sales totalled EUR2.08bn (US\$2.65bn), rising 0.9% on a like-for-like basis. In North America, sales totalled EUR422.4m (US\$536.5m), down by 9.3%. The ramp-up of new General Motors vehicle programmes (Cadillac CTS, Chevrolet Malibu) and BMW almost offset the decline of sales to Chrysler and Ford, the company said.

In South America, sales totalled EUR103.3m (US\$131.2m), an increase of 27.7%. In Asia, sales on a like-for-like basis rose by 7.1% in China and fell by 22.3% in Korea. For the region as a whole, sales were stable at EUR164.9m (US\$209.4m) (+0.1%).

Sales in the vehicle interior modules sector were up 2.1% in the third quarter of 2008, totalling EUR1.97bn (US\$2.50bn). For automotive seating, sales increased by 3.5%; up 2.7% in Europe, where business was sustained with Audi; down 0.3% in North America; up 22.1% in South America and up 9.5% in Asia.

At the end of the third quarter, the economic situation deteriorated sharply, leading to a sudden reduction of automakers' production programmes in Europe. This is expected to result in a decrease of around 11% in Faurecia's sales in Europe during the fourth quarter.

However, owing to a favourable product and customer mix, sales in North America should only fall slightly.

www.faurecia.com

Hexcel Q3 sales rise

NET sales from continuing operations for carbon fibre and composites producer Hexcel during the third quarter of 2008 amounted to US\$331.4m, 17.9% higher than the US\$281.1m reported for the third quarter of 2007. Operating income for the third quarter was US\$35.9m, compared with US\$30.2m for the same quarter last year.



Net income from continuing operations for the third quarter of 2008 was US\$33.0m, compared with US\$18.1m, aided by the previously disclosed US\$11.7m after tax gain on the sale of Hexcel's share in BHA Aero Composites Parts.

Commercial aerospace sales of US\$176.5m grew by 15.5% compared with the third quarter of 2007. Sales to Airbus and its subcontractors increased by more than 20% for the third consecutive quarter. Sales to Boeing and its subcontractors were just slightly above the third quarter of 2007 as sales were impacted by both the Boeing strike and the B787 delays.

www.hexcel.com

Lear reports third-quarter loss

AUTOMOTIVE seating systems supplier Lear noted that the production environment in the third quarter of 2008 was "extremely challenging". In North America, industry production was down by 17% and Lear's top 15 platforms were down by 33%. In Europe, industry production was down by 3% and Lear's top five customers were down by 8%.



In response to rapidly evol-

ving industry conditions, Lear has been aggressively reducing costs and restructuring its global operations.

For the third quarter of 2008, Lear reported net sales of US\$3.1bn and a pre-tax loss of US\$77.3m, including restructuring costs of US\$45.8m. This compares with net sales of US\$3.6bn and pre-tax income of US\$60.1m, including restructuring costs of US\$37.3m and other special items of US\$8.0m, for the third quarter of 2007.

In the seating segment, net sales were down US\$403m. Operating margins declined sharply, reflecting primarily the impact of lower vehicle production.

www.lear.com

TenCate records sales and profits growth

TENCATE reported a 16% increase in sales for third quarter of 2008 to EUR269.6m (US\$342.4m).



For the first nine months, sales rose by 18% to EUR781.2m (US\$992.1m). Net profit before amortisation and excluding the result from divested activities (cash earnings) increased by 38.3% to EUR45.3m (US\$57.5m).

Strong growth in the Advanced Textiles & Composites sector was mainly due to the strong demand from military markets and the aviation industry.

Sales in aerospace/space composites grew, primarily as a result of increased deliveries (TenCate Cetex) for the Airbus A380.

In the US, useful qualification processes in the space and aerospace sector have recently started up, the company noted.

"Partly as a result of recent acquisitions, TenCate has strong technology positions, which will enable significant growth to be achieved in these markets in the near future," said the company.

www.tencate.com

Growth through sustainable development

THE presentation by man-made fibre producer Sinterama at September's Man-Made Fibers Congress held in Dornbirn, Austria, was entitled "How can a polyester yarns manufacturer keep growing through sustainable development".

The lecture by R&D manager Emanuele Pivotto (right) considered sustainable developments, processes and products, and featured a report on the company's experiences in clean and green resources usage.

According to Sinterama's strategy, a company — any company — combines not only the heritage of its members and shareholders, but a social structure that interacts daily with a variety of subjects.

Being fully aware of this "public" dimension involves a continual struggle to put together the legitimate and necessary quest for profitability with respect to individuals and the planet's finite resources.

Sustainable development is defined as the use of global resources to meet human needs by preserving the environment, not only now but in the indefinite future.

Growth clearly passes through care and responsibility and today, more than ever, Sinterama is committed to minimising its impact on the environment and maximising its benefit to the community.

Sustainable processes are able to drive consumer choice but, in order to allow them to correctly complete their purchasing evalu-



ations, the whole process has to be taken into account — not only the operations carried out by one company in the production chain, but also how raw materials have been produced and transported, and how finished goods will be used and possibly recycled.

Unfortunately, there is still no uniform way of evaluation and many things are said according to many points of view. Sinterama, meanwhile, tries to have a common standard to provide complete and reliable information to consumers.

The automotive sector accounts for around 41% of Sinterama's turnover of EUR125m (US \$160m). Production in 2007 amounted to 29,000 tonnes with 800 employees worldwide.

The company's main business is coloured yarn production, which includes the use of exhaust dyeing. The daily consumption of water in its dye-house is 1,000 m³.

Originally, the water was used and then disposed of according to existing laws; considering the importance of such a resource, this would have been enough from a legal point of view but not to fulfil Sinterama's environmental commitments.

Today, as a result of the company's new project, it is possible to reuse two-thirds of this water, considering that most of it is used for washing operations and that the quality required for such an operation is of a lower level compared with that required for



More than 40% of Sinterama's polyester yarns are used in the automotive sector

the dyeing process. Trials are still in progress: the goal is to reach 100% of reuse.

A second example is a product developed using a scrap material. Cocona yarns are high-performance products obtained by adding activated carbon produced using coconut shell waste from the food industry. Among other benefits, the drying time of Cocona products is one of their most interesting performance advantages: compared with regular polyester products, Cocona products dry twice as fast.

Finally, RecyPES polyester yarns from Sinterama are produced from recycled post-consumer soft drink bottles.

Polyester is by far the most used synthetic fibre in the world. Even if such fibres represent only 0.8% of total crude oil production, by reducing its consumption it is possible to provide a significant contribution to environmental protection.

PET bottles are collected, washed, sorted and ground, and the flakes are subjected to depolymerisation and re-polymerisation. The PET chips produced are then spun to produce yarns.

www.sinterama.com
www.dornbirn-mfc.com

Awa and Finetex develop nanofibre filter

Japan's Awa Paper has jointly developed a filter media with South Korean nanofibre manufacturer Finetex Technology.

The new filter media is coated with Finetex's nanofibre web on its surface for automotive engine and gas turbine applications.

Awa Paper is planning to launch this new product shortly and is expecting sales of ¥2bn (US\$20.3m) in its first year:

Compared with current conventional air filters used in engines, the new product is said to have 50% more dust holding capacity for micro-particles such as carbon dust, and in addition, twice the lifetime.

The filter is also smaller and provides more space for efficient engine room design and better fuel economy.

www.awapaper.co.jp
www.finetextech.com

Engine filter

Toyobo subsidiary Kureha Tech has developed a nonwoven-based automotive engine filter material called ffAF (filter fabric for air filter) in collaboration with a leading Japanese automobile manufacturer. The fabric is made in a three-dimensional structure and efficiently filters dust and foreign material from the engine.

Besides, Japan, ffAF has been trialled in the US and Thailand. Kureha has also developed a suction-type filter for automobile gasoline tanks, which is currently being marketed to Japanese automobile manufacturers.

www.kurehatech.co.jp
www.toyobo.co.jp

Steel cord-reinforced GMT for crash impact

A NEW steel cord-reinforced glass mat-reinforced thermoplastic (GMT) material has been developed that can meet crash impact requirements for speeds up to 80 km/h.

Its designation EASI (energy, absorption, safety, integrity) describes the principal functions of the new material system. The first EASI applications, which will go into serial production in 2009, have been developed by Quadrant Plastic Composites in co-operation with Voestalpine Polynorm Plastics and Bekaert.

Through the targeted use of steel cord-reinforced GMT/GMTex, weight reductions of up to 30% can be achieved compared with conventional solutions.

EASI is a panel-shaped hybrid semi-finished material, made of steel and glass fibre in a polypropylene matrix, whereby the directional steel cord is further reinforced with additional layers of glass fibre fabrics.

Depending on the application demands, the properties of the steel cord-reinforced GMT/GMTex can be varied. Impact re-



sistance, strength or stiffness can be adjusted and combined according to customer specifications.

Steel cord-reinforced GMT/GMTex has been developed to comply with specific requirements for weight reduction and optimised crash performance. Therefore, steel cord-reinforced GMT/GMTex materials can also be used in highly exposed and crash-relevant structural components.

Other possible applications include the underbodies of off-road vehicles, as well as bumpers and lateral collision elements in doors.

www.quadrantcomposites.com
www.voestalpine.com
www.bekaert.com

Commercialisation of innovative fibres

TEIJIN is to press on with the commercialisation of several new, innovative products, despite the current global financial turmoil and rising raw material costs, according to vice president Yoshinaga Karasawa.

Following the recent production start-up of a high-strength polyester nanofibre called Nanofront with a monthly capacity of 25 tonnes, the company started production last month of a high-performance, durable antistatic polyester called Bewell with a monthly capacity of 80 tonnes.

Further, production of a heat-resistant bioplastic made from polylactide called Biofront, which can withstand temperatures of 220°C and has been in pilot plant operation with an annual capacity of 200 tonnes, will be expanded to 1,000 tonnes at Teijin Fiber's Matsuyama plant and will start commercialisation in April 2009.

This project is being undertaken in collaboration with Toyota to produce bio-products for automotive interiors.

www.teijin.co.jp

Latex-free carpets possible with thermo-bonding and laminating

KLIEVERIK has developed an innovative system for processing latex-free carpet. Called the Carpet Fusing Calendar CFC, a large number of these machines are already operational at leading European companies.

The process is said to have generated huge interest from the carpet industry, and particularly from the automotive and aircraft sectors. Both machine and products have been patented by Klieverik.

The tuft-lock is achieved by an extremely accurate heat treatment. This entirely eliminates the latex layer or the thermoplastic adhesive layer, which have traditionally been used for this application. The individual fibres of the pile yarn are to a certain degree melted together on a heated drum and simultaneously anchored to the primary backing by a pressure roller.

Carpet produced in this way consumes just 10% of the energy of a conventional latex line, says

Klieverik. Further, the equipment needs just a fraction of the floor space and products are eventually 100% recyclable.

The new method of thermo-fusing opens up the possibility for recyclable carpet, which can be produced in an economically attractive and ecologically justified manner. Further economic advantages can also be achieved through the lower transport costs of these lighter carpets, while other benefits include negligible volatile organic compound (VOC) emissions and odourless carpet.

Klieverik offers a complete solution for laminating the tuft-locked carpet to a secondary backing in a single passage. After the fusing stage in the CFC, thermoplastic powder is applied by a powder-scattering device on the already heated carpet backing and is melted completely in the Ecosafe laminating machine.

The secondary backing is then applied and a laminated carpet

has been produced in just one processing stage.

The company says automotive suppliers have immediately seen the advantages of using latex-free carpet, and a series of extensive tests have been conducted by subcontractors of many leading European car makers.

These auto producers have seized the chance of using a carpet that is 100% recyclable, has no odour emission, is easily deformable and lightweight, yet still has the same properties as traditional carpet. Several leading companies have taken a lead on their competitors by purchasing the CFC, says Klieverik.

Meanwhile, producers of contract carpet and carpet tiles have been particularly interested in this revolutionary method, which can replace latex entirely or partially replace thermoplastics.

Producers of residential carpet are also showing interest in putting existing qualities through this new technology or examining the possibilities of launching revolutionary new carpets on the market.

At the Klieverik pilot plant, tests can be carried out to a maximum width of 1.80 m, and the established parameters can be translated to a production machine.

www.klieverik.com

Japan to sign EPA with Vietnam

JAPAN and Vietnam have reached agreement on an economic partnership agreement (EPA), which will reduce to zero customs duties on automotive parts. Vietnam presently charges a tax of 5-10% on such products as seatbelts and tyres from Japan, and these will be free of tax within 10 years.



Klieverik Carpet Fusing Calendar CFC

New president of Lectra North America



Roy Shurling

Lectra, an integrated technology solutions supplier to industries using soft materials — textiles, leather, industrial

fabrics, and composite materials — has appointed Roy Shurling as president of Lectra North America, which covers the US, Canada, Mexico, and the Caribbean.

Shurling has been with Lectra for more than 20 years and was most recently world senior vice president of automotive and transportation, based in Lectra's US headquarters at Marietta, Georgia.

Previously, as world senior account director, he managed the accounts of such customers such as Boeing, Lockheed, Brunswick, Seton Leather, Johnson Controls, Autoliv, Milliken and Delphi.

Until that time, he had held a number of senior positions on both the technical and sales sides of Lectra's operations in North America.

www.lectra.com

Trends in high-tech materials and surfaces

THE appreciation of value, cost, function and the changing demands of society and within the different user groups of vehicles and other modes of transportation is opening up new opportunities for interior textiles.

Technical innovation widens the field of application whereas the trend toward sustainability will greatly influence the authenticity of products and the appearance of interiors in general.

Addressing September's 47th Dornbirn Man-Made Fibers Congress, Professor Brigitte Scheufele of the Faculty of Textile and Design at Reutlingen University, Germany, said future trends will include bionics, dimension, liquids and organics.

Bionics relates to technical textiles borrowed from nature, such as the "Kofferfisch" Mercedes-Benz bionic car concept (above right) from Daimler. Sustainability can be visualised through bionic design. Dimension refers to such concepts as translucent, light, textures and layers.

Liquids are soft, fluent and shiny, offering white, round, shiny, linear accents. These may be translated as high gloss and



contrasts, or edgy shapes softened by textiles. This is further exemplified by concepts of dynamic and speed, spacey structures and the impact of surface on shapes.

The material expression of organics includes concepts of green technology, recycling and the return of wood and paper. Textiles become textured, folded and structured, soft and sensitive, with more emphasis placed on contrasts and colours.

All this requires the matching of materials to visualise the functionality. "New materials and finishes allow a new use of traditional materials, which create more possibilities for the use of textiles in automotive and transportation," said Scheufele.

"New technologies create customised products, while the emphasis of touch, smell and look create new demands in development and design."

www.reutlingen-university.de

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SIGNED DATE

Canadian residents should add sales tax at the appropriate rate.

To comply with EU regulations we have to show on our invoices, our reciprocal VAT (TVA/IVA/MWst/BTW/MOMS) numbers. We hereby inform you that our VAT registration number is GB 797 3242 91. In order to comply with EU regulations, please fill your VAT/TVA/IVA/MWst/BTW/MOMS number in the box below: