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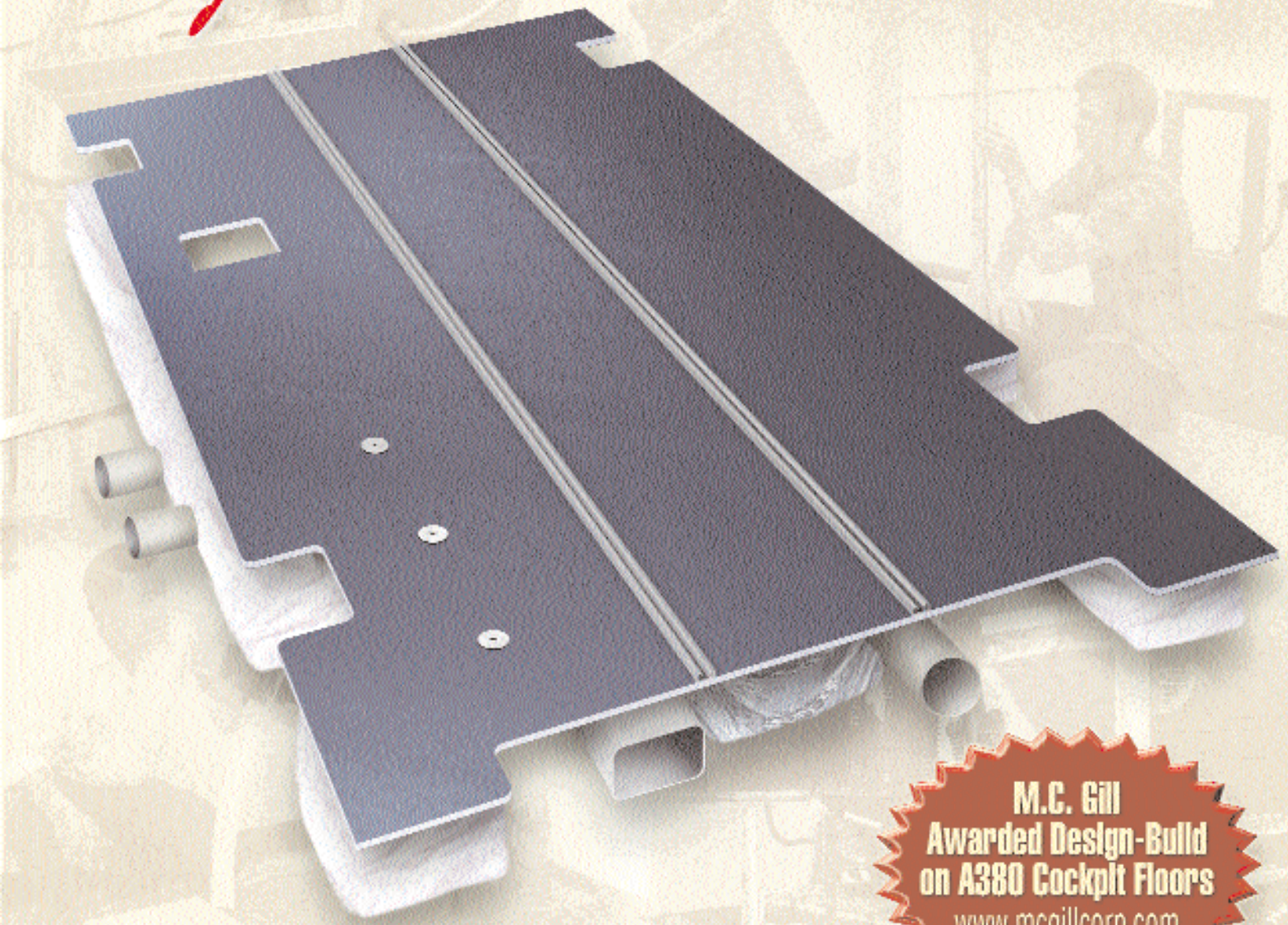
WINTER 2003

THE M.C. GILL DOORWAY™

HIGH PERFORMANCE COMPOSITE PRODUCTS SINCE 1945

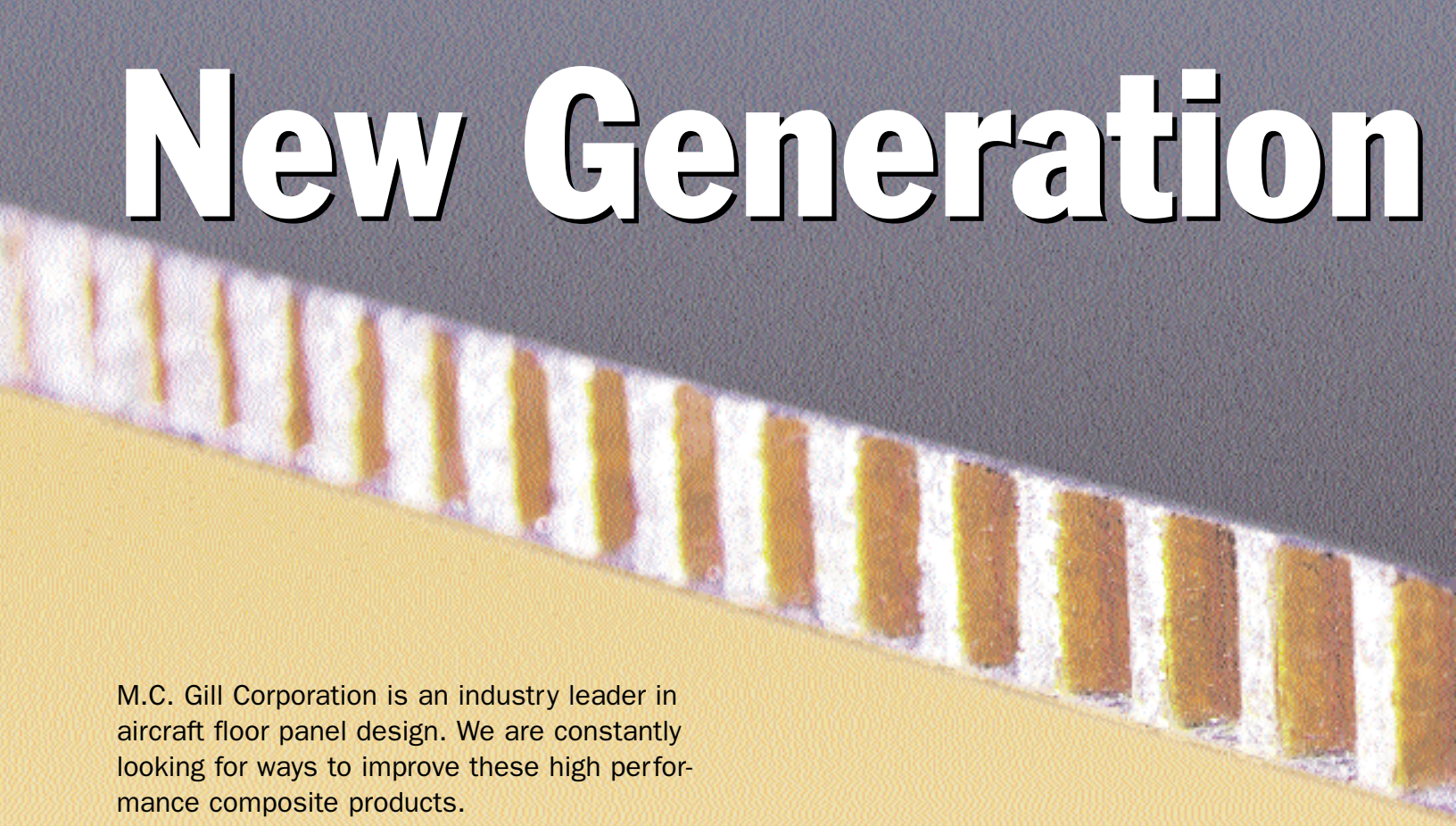
Next Generation Floor Panels



M.C. Gill Awarded Design-Build on A380 Cockpit Floors

www.mcgillcorp.com

New Generation



M.C. Gill Corporation is an industry leader in aircraft floor panel design. We are constantly looking for ways to improve these high performance composite products.

What is on our OEM and airline customer wish lists as they look for ways to simplify and improve their future floor panel applications? When considering how customers would like a new generation of floor panels to be configured, there are generally five main areas of interest.

1. Improved Durability

Continuous research works to create tougher passenger and cargo floor panels that better stand up to use in an aircraft from maintenance check to check. In particular, there is great interest in seeing how improved abrasion and impact resistance can be achieved. There are many approaches to improving durability, which is especially needed in areas where they take a beating. One new panel configuration that is currently being subjected to rigorous in-service testing is the Gillfab™ 5223 floor panel. This innovative design bonds a thin stainless steel layer to the panel skin, which significantly improves abrasion resistance from objects being dragged across cargo compartment floors during loading and unloading.

These panels promise a great deal in the way of improved abrasion resistance and will undergo significant testing and qualification before being put into service.

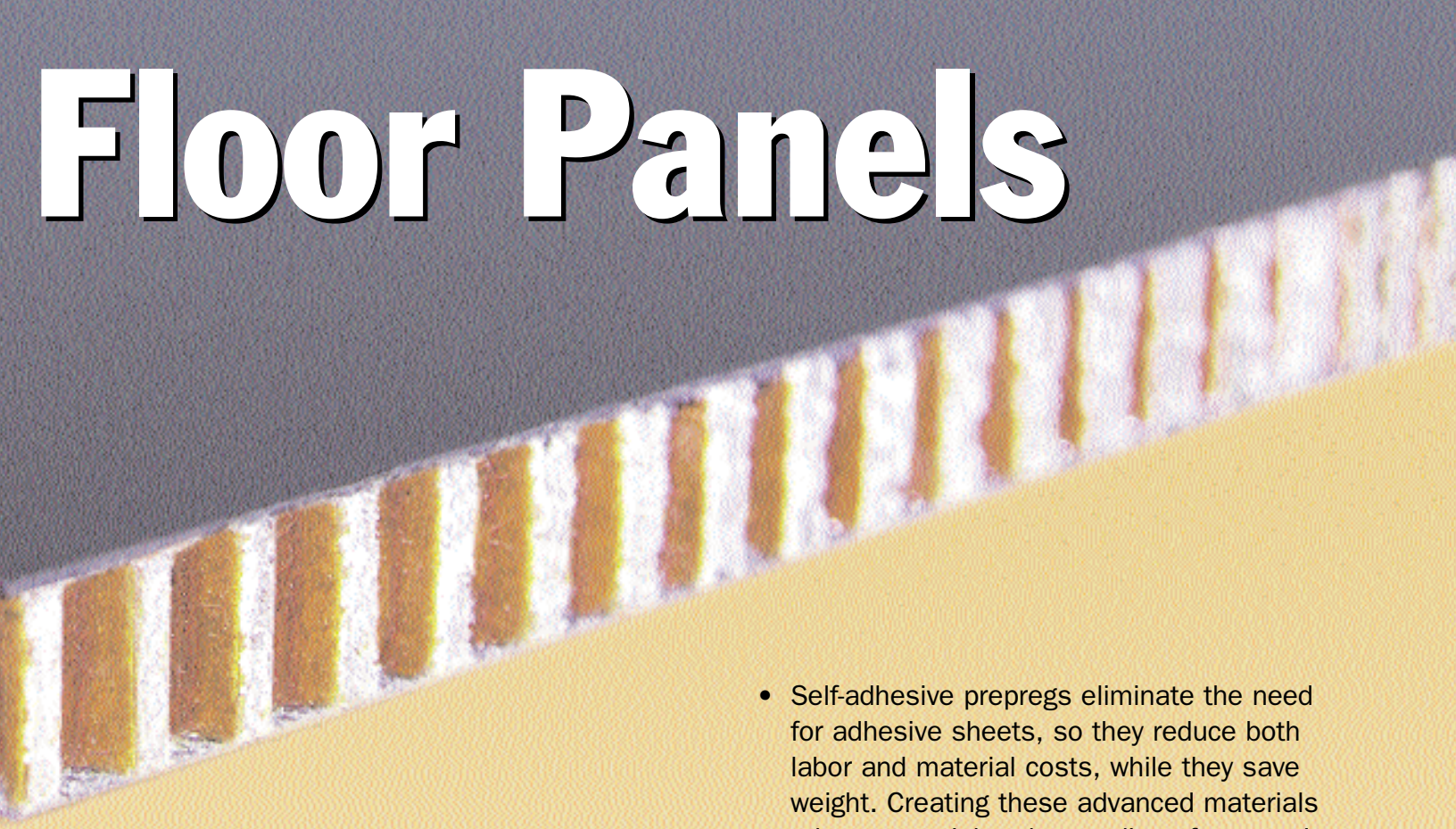
2. Specification Consolidation

Will it eventually be possible to combine the best qualities of all panels into a few universal floor panels that perform well in the majority of situations? This may be possible to some degree. There are essentially three major types of floors:

- Cargo floors that take a pounding by the movement of goods.
- High-traffic floors for passenger aisles and busy locations.
- Low-traffic floors in locations such as under passenger seats.

The creation of specification consolidation would result in a reduction in the number of different panel constructions geared to the same application. This has the potential to

Floor Panels



reduce cost and streamline inventories. If an airline only needs to stock a smaller selection of panels that work in the widest variety of situations, it will be much easier to have the right panel on hand when needed.

3. Ultra Light Weight

The larger the airplane, the more important saving every gram of weight becomes. By reducing weight even a small amount on each panel, a significant load can be eliminated from the total aircraft. This saves fuel and reduces the cost of operation.

One big advantage M.C. Gill can offer in designing weight-saving floor panels is the use of unidirectional materials. While other panel designs specify a woven fabric, it is well-known that a unidirectional material offers greater flexibility in design, in addition to a weight savings. We are long-time experts in unidirectional prepregs.

There are other techniques and materials that can be brought into play to decrease the weight of new generation panels. For example:

- Self-adhesive prepregs eliminate the need for adhesive sheets, so they reduce both labor and material costs, while they save weight. Creating these advanced materials takes a special understanding of composite fabrication and resin systems.
- A depth of expertise in the use of unidirectional state-of-the-art carbon prepreg allows us to tailor construction to weight constraints.
- Gillcore™ HK Kevlar® Core in sandwich panel configurations adds strength while reducing weight.
- Carbon skins and Kevlar® Core combination panels are a new option sparked by the development of Super Jumbo aircraft, where reducing weight is of primary importance.
- PAA-CORE™ aluminum honeycomb provides a highly corrosion-resistant structure for panels. It is made by Alcore – part of the M.C. Gill Group of Companies.

For more information on corrosion-resistant PAA-CORE™ aluminum honeycomb, contact Alcore:

phone: 410 676-7100 fax: 410 676-7050
www.alcore.com email: sales@alcore.com

4. Value Added with Cost Containment

To reduce the overall cost of assembling an aircraft, and to help with upgrading or replacing panels during a check or repair, a variety of value-added features can be added to panels. For example, we are exploring techniques for mounting seat tracks into panels. This would allow for easier, and more economical, installation of multiple components in a single operation. Panels might also be fixed with duct work, insulation or structural features.

Panels that are precut to specific configurations can save time and costs. Additionally, panels could have inserts installed that meet specific shear requirements. These "performance driven" panels might even have carpet or another floor covering attached. With the addition of any of these features, the panels can be installed in an aircraft with fewer additional steps.

5. Sound Attenuation

When floor panels reflect sound, rather than absorbing it, they add to the general noise level in the cabin. This is tiring to passengers who usually don't even realize how being battered by sounds adds to the wear-and-tear of their journey. Not only is M.C. Gill working on methods of designing and constructing floor panels that dampen sound, but we are collaborating with researchers at the University of Southern California to make improvements.

Under the leadership of Dr. Steven Nutt, Director of the Merwyn C. Gill Composites Center at the University of Southern California, a variety of acoustical tests are being undertaken. These evaluate the reflective response of panels when subjected to different types of sound waves. As the information is gathered and evaluated, it is turned into innovative changes in panel construction.

By adding improved sound attenuation characteristics, the next generation of M.C. Gill panels promise to make aircraft cabins quieter, as they reduce the cost of additional, expensive sound insulation.

Tailoring a Panel Design to Meet Your Needs

By listening to customers and helping them refine what they want, M.C. Gill is not only able to tailor panels to individual needs, but truly create a whole new generation of aircraft floor panels.

Cockpit Door Retrofits Use Gillfab™ Bullet-Resistant Panels

Executive Concepts

Executive Concepts is working with aircraft operators to retrofit cockpit doors so they are both more secure from forced entry and bullet resistant. The company recently worked with M.C. Gill Corporation to create a light-weight, highly effective bullet-resistant panel for replacement cockpit doors.

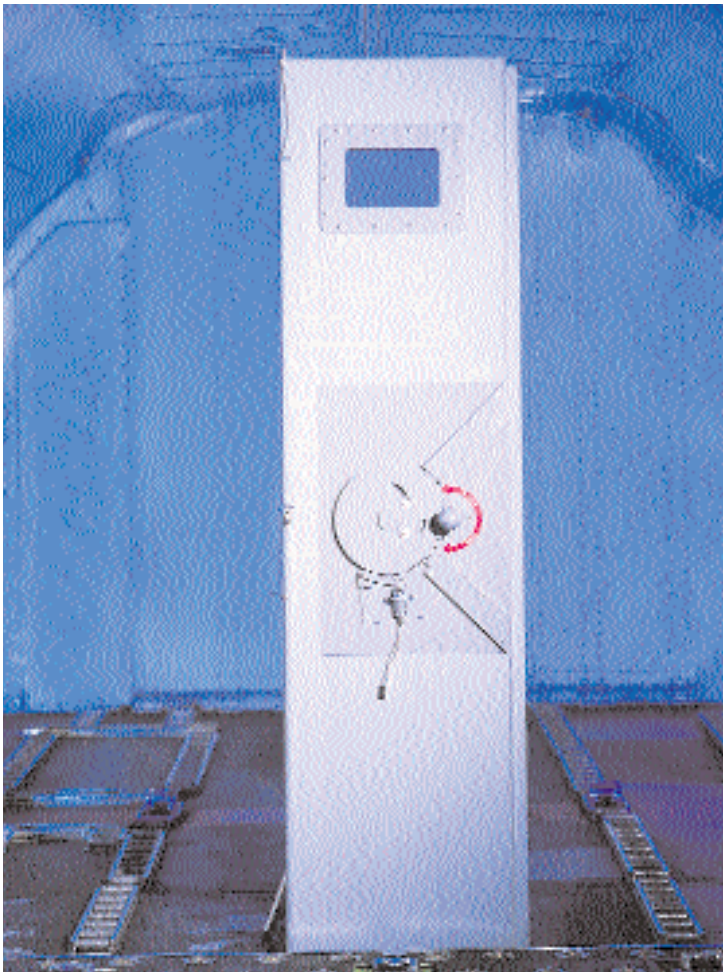
Mark Van Meter, Vice President at Executive Concepts, learned about M.C. Gill's ability to provide a selection of bullet-resistant laminates that can be tailored to specific applications. The panel design needed to take into consideration concerns about weight and cost and performance.

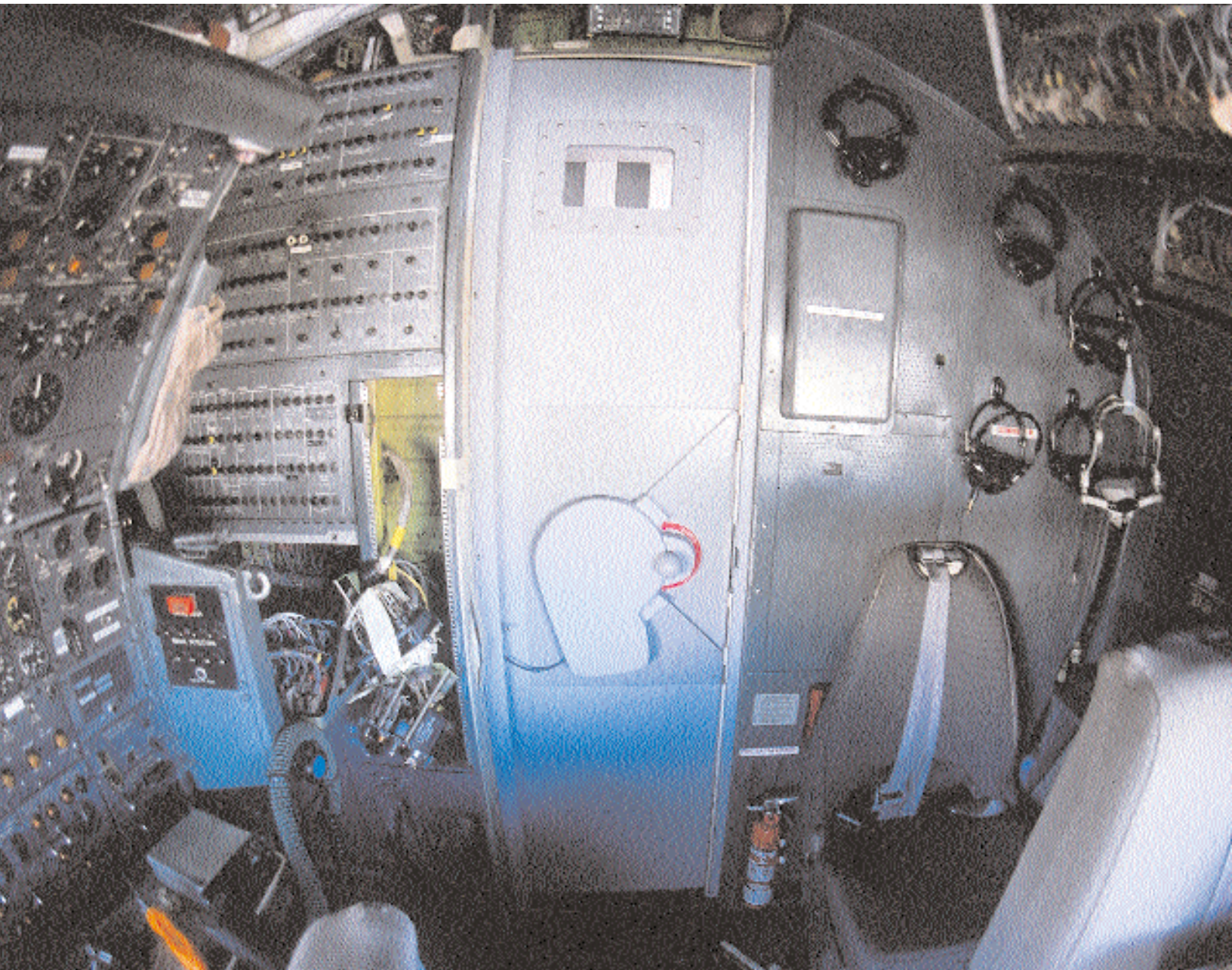
The first installation of a new Executive Concepts safety door – using a Gillfab™ 1360B laminate panel over a Gillfab™ 5072 Interior Panel – occurred recently with Kitty Hawk Corporation, a freight operator based in Dallas, Texas. Kitty Hawk operates a fleet of 727s. Kitty Hawk worked with Executive Concepts to find the right configuration for a door to meet their needs and installation schedule.

With this installation, they seek a supplemental type certificate which is required for further installations.

The new bullet-resistant door is prepared for installation.

The improved locking mechanism before its protective cover is installed.





Offering a Variety of Ballistic Laminates

M.C. Gill manufactures a number of ballistic laminates that resist bullets. Our involvement with these products can be traced back to the early years, when the Navy was asking for materials to protect its vessels from attack. These offerings have evolved over time, with a new series of products reengineered in the wake of increased global security concerns.

Current products most often used in aircraft applications include:

- Gillfab™ 1360A Panels – These use Kevlar® fabric, which is world-renowned for its light weight and bullet resistance in a variety of applications.
- Gillfab™ 1360B Panels – An aramid fabric, offering approximately 25% weight savings over Kevlar®.
- Gillfab™ 1394 Panels – S-2 Glass® roving reinforced phenolic, high-performance ballistic laminate, offering proven reliability and value.

Working with a Range of Door Fabricators

M.C. Gill continues to work with a wide variety of airlines, OEMs, repair facilities and other companies to assist in providing ballistic laminates that are responsive to individual needs and situations. The requirements for each aircraft, operator and MRO provider are different. We pride ourselves on the ability to show the flexibility it takes to tailor our ballistic products to almost any need.

Opposite page, top photos: Executive Concepts technicians carefully install new door, resulting in elegant new cockpit protection.

Bottom photo: Installed door viewed from cockpit, looking aft.

Quiet Wing Qualifying Cockpit Door with Gillfab 1394 Ballistic Panels

Seattle-headquartered Quiet Wing is using Gillfab bullet-resistant panels – made with S-2® Glass – for its cockpit security door conversions.

"We are extremely happy with this M.C. Gill S-2 Glass product. After conducting in-house and FAA-witnessed testing, we not only found it readily passed bullet-resistance and intrusion test standards, but was easy to machine using water jet cutting, and mates readily to aluminum honeycomb," Emily Morrison from Quiet Wing said. "It is also completely inert, very long-lasting and easily passes all the FAA-required burn and smoke testing. Considering this door will be in service with airlines for 20 to 30 years, longevity and ease of use is extremely important."

Quiet Wing has created a single design for their high-security door, allowing it to be installed in a variety of aircraft types with minor modification. The FAA testing is currently finalizing review of this door on 737s, with installations on 737, 727, 747, ATR and other aircraft types underway.

"A key feature is the simplicity of the design. The door is constructed of just two layers, the ballistic laminate over aluminum honeycomb. This saves weight, complexity and reduces production costs," Ms. Morrison explained. "We are getting a good response from operators on this essential new cockpit protection product."

Merwyn C. Gill Way Leads to Easy Street

On August 15, 2002, the El Monte City Council honored M.C. Gill Corporation Founder and Chairman, M.C. Gill, by changing the name of the street leading to the company headquarters. This celebration was to honor Mr. Gill for the 42 years his company has been located on Easy Street in El Monte. During this period the company has demonstrated sustained growth and an impeccable record of community support. While the company maintains its famous Easy Street address, the section of the street that turns off Valley Boulevard is now officially Merwyn C. Gill Way.

In an event which drew an enthusiastic crowd of over 250 visitors, presentations were made by El Monte Mayor Rachel Montes and City Council Members Tony Fellow, Art Barrios, Jack Thurston and Ernest Gutierrez. They presented a metal copy of the new street sign, which was framed by being imbedded in one of the company's proprietary composite/balsa wood panels made in the M.C. Gill plant.

Company CEO, Kenneth Boudreau, provided opening remarks and introductions. M.C. received several awards, including a letter from State Senator Gloria Romero's office.

1. Over 250 visitors attended the ceremony… **2.** CEO Ken Boudreau spoke… **3.** The new corner of Easy Street and Merwyn C. Gill Way… **4.** Ken and M.C. admire the new sign… **5.** El Monte Mayor Rachel Montes… **6.** The El Monte City Council, with Rosemead Mayor Bob Bruesch, present a new street sign mounted on a Gillfab™ panel to M.C.

Castle Industries, Inc. of California to Supply Operator Seats for Boeing's Multimission Maritime Aircraft

Castle Industries recently supplied six Operator Seats to Boeing for the mockup of the workstations for the U.S. Navy Multimission Maritime Aircraft Program. Boeing is proposing a 737-700 aircraft as the replacement for the U.S. Navy aging fleet of P-3C and EP-3E aircraft.

The seats are designed and built to be compact, lightweight and comfortable for airborne technicians who must sometimes remain seated for extended periods of time. The seat swivels 360 degrees with eight index positions, and is designed for track mounting.

The seats are designed to meet 16g loads and have been tested for occupancy during flight, takeoff and landing conditions, in any one of the eight index positions.

The seat frame is thin-wall tubing supporting aluminum alloy sheet metal headrest and backrest panels and a bottom cushion pan. The sheet metal structure has a data storage pouch on the back of the seat. Standard features include a lap belt and shoulder harness and a crotch strap can be provided if required. The backrest cushion has a built-in lumbar and kidney support contour. The complete seat weighs slightly more than 40 pounds.

Castle Industries is part of the M.C. Gill Corporation Group of Companies and is located in Ontario, California. Castle produces machined and sheet metal components, observer and operator seats, custom electronic consoles and racks, and mechanical aircraft assemblies.

In-house capabilities include design engineering, upholstery fabrication, certified aircraft welding, metal machining and forming, painting and assembly.

Castle Industries of California, Inc.

phone: 909 390-0899 Ext: 228
fax: 909 390-0898
email: info@castleindustries.net

Gill Bin

To help us evaluate the performance of our products, we initiated an innovative system for recovering used panels from aircraft. A large bin is placed in a hangar and loaded with panels and cargo liner as they come out of the aircraft during a maintenance check or repair.

When a substantial number of panels have accumulated, the bin is returned to the M.C. Gill R & D Laboratory in El Monte, California, where they are examined. Technicians analyze any failure and observe other factors that provide essential information for redesign and continuous improvement. By evaluating panels and liner that have undergone the everyday wear-and-tear of use, it is possible to gain a better understanding of our products' capabilities and meet customer requirements.

Visit the M.C. Gill Corporation Trade Show Booth

JEC
1–3 April 2003
Paris, France
Alcore Brigantine and M.C. Gill Joint Booth

MRO Show
15–17 April 2003
Broward County Convention Center
Fort Lauderdale, Florida

Aircraft Interiors Show
22–24 April 2003
Broward County Convention Center
Fort Lauderdale, Florida

Shirley Turner and Susie Cheng – M.C. Gill Customer Service.

Snapshots

M.C. Gill Corporation enjoys visitors from all over the world.

Mr. K. Konno and Mr. D. Kodera
from the Earth Clean Company in Japan, which uses honeycomb wheels for desiccant air conditioning systems.

Stanford Solar Car Crew: Eerik Hantsoo, Eloy Avila, and Gene Berdichevsky drove over 1000 miles in one day to visit us.

Jim Landeros and Scott Brinker from M.C. Gill with Wendy Engstrom – Boeing Lean Consulting Manager were part of a team working to streamline a production process.

Manfred Haverland and Hubert Seher from Aerodata AG in Braunschweig, Germany, evaluating composite panels and Castle Industries equipment racks for special mission aircraft.

A management coordination meeting of the M.C. Gill Group of Companies: left to right – from M.C. Gill in El Monte except as noted: Alan Baldwin – Alcore, Paul Draghi, Eldon Swanson – Castle Industries, Irv Freund, Martin Canning – Europe, Frederic Caramanos – Alcore Brigantine, Bill Justus – Alcore, Maurice Trevinal – Alcore Brigantine, Tammy Christen, M.C. Gill.

The M.C. Gill Group of Companies

M.C. Gill Corporation

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To subscribe to The Doorway or update your mailing address: info@mcgillcorp.com

The M.C. Gill Corporation is the world's largest manufacturer of original equipment and replacement baggage compartment liners for passenger and freighter aircraft. We are one of the largest producers of composite sandwich panels used for aircraft flooring in these markets.

The company also excels in most other types of fiber-reinforced plastics including flat panel composites, bullet-resistant ballistic laminates, interior panels for creating structures such as aircraft galleys and bulkheads, honeycomb core and related products.

Alcore

Manufactures a variety of metallic honeycomb cores for aerospace and other applications. Offers extensive special processing capabilities on metallic and non-metallic cores, from simple operations like chamfering to complex processes including roll-forming, 5-axis machining and splicing of different densities into core blankets.

Alcore
Lakeside Business Park, 1502 Quarry Drive
Edgewood, Maryland 21040 USA
phone: 410 676-7100 fax: 410 676-7050
email: sales@alcore.com

Alcore Overnight™
Expedited Delivery
email: overnight@alcore.com

Alcore does not sell sandwich panels. Contact M.C. Gill for these products.

Castle

Specializes in aircraft quality metal parts fabrication, engineering and design. If a piece of metal can be bent, pressed, punched, routed, shaped, molded, welded, profiled or fabricated into a high-performance part, Castle has the equipment and experience to do it.

Castle Industries of California, Inc.
601 South Dupont Avenue
Ontario, CA 91761-1502 USA
phone: 909 390-0899 fax: 909 390-0898
email: info@castleindustries.net

Alcore Brigantine

Offers broad capabilities in structural core materials technology in Europe, including: Aluminum honeycomb, with special processing expertise and an in-house design office. Manufacture of sandwich panels from simple shapes to extremely complex parts. Advanced aluminum honeycomb shock absorption materials used as a kinetic energy absorber in everything from high-speed trains to automotive safety.

Brigantine propose une offre de compétences très large sur les technologies des matériaux d'âme structuraux en Europe. Fabrication de nid d'abeilles aluminium, expérience de l'usinage de précision de ce matériau, bureau d'études intégré. Fabrication de panneaux sandwich, des grandes séries aux pièces les plus complexes. Etude et fabrication d'absorbeurs de chocs en aluminium pour de nombreuses applications allant du ferroviaire à l'automobile.

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fax/télécopie: + 33 (0) 5 59 41 25 00
email: sales@alcorebrigantine.fr

Insoleq – M.C. Gill Europe Ltd.

Manufactures aircraft insulation, details composite panels including various honeycombs and creates complex assemblies using advanced fabrication methods. It also provides warehousing for other M.C. Gill products for quick European delivery.

Insoleq
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23 Enterprise Road, Balloo Industrial Estate South
Bangor Co-Down BT19 7TA, N. Ireland
phone: +44 (0) 2891 470073
fax: +44 (0) 2891 478247
email: sales@insoleq.co.uk

Trivia

Rubber bands last longer when refrigerated.

★ ★ ★

Peanuts are one of the ingredients of dynamite.

★ ★ ★

There are 293 ways to make change for a dollar.

★ ★ ★

The average person's left hand does 56% of the typing.

★ ★ ★

A shark is the only fish that can blink with both eyes.

★ ★ ★

On a Canadian two dollar bill, the flag flying over the Parliament building is an American flag.

★ ★ ★

There are more chickens than people in the world.

★ ★ ★

Two-thirds of the world's eggplant is grown in New Jersey.

★ ★ ★

All of the clocks in the movie "Pulp Fiction" are stuck on 4:20.

★ ★ ★

"Dreamt" is the only English word that ends in the letters "mt."

★ ★ ★

All 50 states are listed across the top of the Lincoln Memorial on the back of the $5 bill.

★ ★ ★

Almonds are a member of the peach family.

★ ★ ★

Winston Churchill was born in a ladies' room during a dance.

★ ★ ★

Maine is the only state whose name is just one syllable.

★ ★ ★

There are only four words in the English language which end in "dous": tremendous, horrendous, stupendous, and hazardous.

★ ★ ★

Los Angeles' full name is "El Pueblo de Nuestra Senora la Reina de los Angeles de Porciuncula."

★ ★ ★

A cat has 32 muscles in each ear.

★ ★ ★

An ostrich's eye is bigger than its brain.

THE FUNNY SIDE

The man looked a little worried when the doctor came in to administer his annual physical, so the first thing the doctor did was ask whether anything was bothering him.

"Well, to tell the truth, Doctor, yes," said the patient. "You see, I seem to be getting forgetful. No, it's actually worse than that. I can never remember where I park my car, where I'm going, or what it is I'm going to do once I get there, if I get there at all. So, I really need your help. What can I do?"

The doctor mused for a moment, then answered politely, "Pay me in advance."

★ ★ ★

"Dad," said little Johnny, "I'm late for football practice. Would you please do my homework for me?"

The father said irately. "Son, it just wouldn't be right."

"That's OK," replied Little Johnny, "but you could at least give it a try, couldn't you?"

★ ★ ★

"Look at me!" boasted the fit old man to a group of young people. "Every morning I do 50 push-ups, 50 sit-ups and walk two miles. I'm fit as a fiddle. And you want to know why? I don't smoke, don't drink and don't stay up late."

He smiled at them, teeth white, eye gleaming. "And tomorrow I'm going to celebrate my 95th birthday!"

"Oh, yeah," sneered one of the crowd, "How?"

★ ★ ★

A golfer, playing a round by himself, is about to tee off, and a greasy little salesman runs up to him, and yells, "Wait! Before you tee off, I have something really amazing to show you!"

The golfer, annoyed, says, "What is it?"

"It's a special golf ball," says the salesman. "You can never lose it!"

"Whattaya mean," scoffs the golfer, "you can never lose it? What if you hit it into the water?"

"No problem," says the salesman. "It floats, and it detects where the shore is, and spins towards it."

"Well, what if you hit it into the woods?"

"Easy," says the salesman. "It emits a beeping sound, and you can find it with your eyes closed."

"Okay," says the golfer, impressed. "But what if your round goes late and it gets dark?"

"No problem, sir, this golf ball glows in the dark! I'm telling you, you can never lose this golf ball!"

The golfer buys it at once. "Just one question," he says to the salesman. "Where did you get it?"

"I found it."