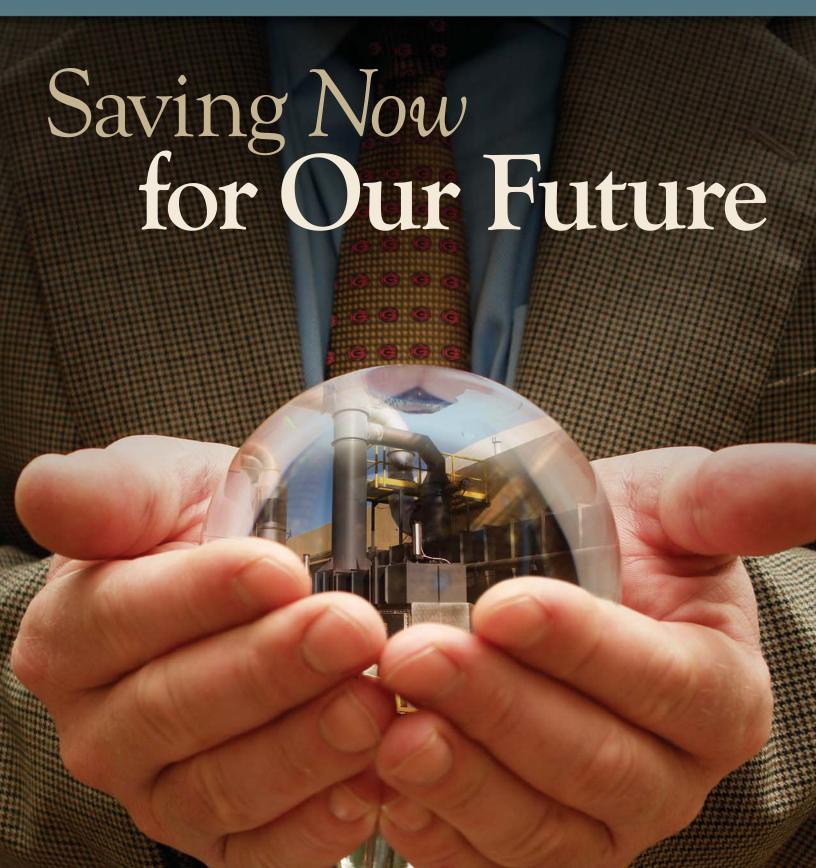
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# When We Conserve We All Win

It's hard to go anywhere these days without hearing about the "high price of fuel and the need to conserve our natural resources." As individuals, we see it at the gas pump and we feel it when our heating bills arrive. For the engineering staff at M.C. Gill Corporation, those words became a challenge to increase manufacturing efficiencies while conserving natural resources.







# When We Conserve, We All Win

M.C. Gill Corporation is an expert at manufacturing advanced composite materials. Since 1945, we've pioneered the science of producing light weight, structurally robust composite materials that are favored by the aerospace industry. As the aerospace industry has embraced technology and incorporated more and more composites, their demands for stronger, lighter more advanced materials have increased significantly. "The 787 Dreamliner is a conventionally-configured, mid-sized, twin-engine, twin-aisle aircraft in the same category as Boeing's 767, but designed to take advantage of technologies already investigated for Boeing. Its extensive use of

super-efficient jet engines would, Boeing contends, offer airlines 20% greater fuel economy and an equal reduction in pollution emissions, as well as a 10% lower seat mile cost than today's in-service aircraft. Composites would yield better fatigue and corrosion resistance and higher strength-to-weight ratios, providing for a more integrated structure, and increase the useful life and residual value of each aircraft."

STRUCTURAL COMPOSITES CONTRIBUTE





www.compositesworld.com, Griffiths, Bob, May 2005

Interest in conserving natural resources has snow-balled in the last few years. The movement has fueled widespread acceptance of advanced composites and an increasing demand for more efficient aircraft like the Boeing 787 and Airbus A380. More demand means more manufacturing and until recently that was largely in direct opposition to the goals of conservationists.

Regulating agencies like the Public Utility Commission (PUC) and the Air Quality Management District (AQMD) have exerted growing pressure on local utilities to establish strategic programs that encourage manufacturers to adopt more efficient practices. That effort has resulted in the development of cooperative incentive programs to help manufacturers to "be more green."

M.C. Gill Corporation's long history of conservative steady growth might suggest we are slow to change. However, management wisely recognized this movement as an opportunity and reacted decisively. The goal was to identify less-efficient areas on the manufacturing floor and implement a plan to augment the existing machinery with more efficient equipment and processes. Once implemented, we could gain multiple benefits while greening our operation.



Refueling truck prepares aircraft for flight.



# When We Conserve, We All Win

The addition of \$10 million in modern new equipment helped narrow the possibilities. Director of Engineering, Greg Zeronian identified three older recuperative oxidizer units as the key pieces of equipment to remove. He would replace them with two new regenerative oxidizers that would significantly reduce volatile organic compound emissions (VOCs) including CO<sub>2</sub>. Zeronian's plan, incorporating the new oxidizer units, would potentially reduce natural gas use by 20%. In addition, the new technology would allow us to re-channel the heat produced in the process towards heating our honeycomb bake ovens.

Zeronian contacted the Southern California Gas Company to explore their business incentive program.<sup>2</sup> Senior Engineer, Kevin Ehsani and Account Representative, Juan Loayza met with Zeronian and agreed the project had serious merit.

In the fall of 2006, M.C. Gill Corporation invested close to \$700,000 in the new equipment and received approval to replace the old oxidizers with the new equipment. Zeronian's in-house staff successfully oversaw installation and relocation on the manufacturing floor without interrupting the day-to-day operations.

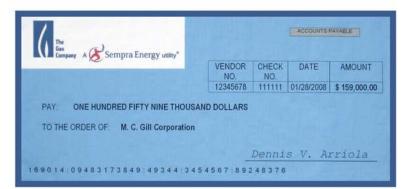
By the spring of 2007, the transition of equipment was complete. In recognition of their success, Juan Loayza met with Zeronian to present an incentive check worth \$159,000 to M.C. Gill Corporation on behalf of The Gas Company.

The incentive is a welcome acknowledgement of our efforts to create a more efficient manufacturing environment. Within the last year alone, M.C. Gill Corporation has saved over 300 million cubic feet of natural gas. That represents a reduction of more than 25% over previous natural gas usage and exceeds original projections. In addition, we've increased capacity and eliminated 98% of production vapors as well. A review of the AQMD's Annual Emission Report reveals we are substantially below acceptable levels. At a time when we can all make a difference, M.C. Gill Corporation is proud to be a part of the growing green effort and serves as an example to other manufacturers.





Gauges showing reduced vapor emissions.





Gas Company Sr. Account Representative, Juan Loayza presents Greg Zeronian with the M.C. Gill Corporation incentive check.

<sup>&</sup>lt;sup>2</sup> http://www.socalgas.com/business



# M.C. Gill rporation

Over the course of the last 20 years advanced composite materials have become the darlings of the airline industry. They offer flame resistance, low smoke, low toxicity and, of course, substantial weight-saving properties. Rising fuel and structural material costs have driven designers to rely heavily on advanced composites, incorporating them into areas once exclusively assigned to metal components.

Starting in 1989, M.C. Gill Corporation wowed the industry by introducing a series of cargo liners and floor panels to fulfill the needs of the Airbus A300 series aircraft. Among the floor panel products developed was a bulk cargo floor panel for the A300-600, A310, A320, A321, A330 and A340 aircraft. Qualified to Airbus Industrie Technical Specification

No. 5360 MIB 000100 (issue 6,7), Gillfab™ 4323 was a low smoke sandwich panel with facings of phenolic resin reinforced with woven glass cloth and Nomex® honeycomb core. The success of Gillfab 4323 prompted M.C. Gill Corporation to develop something better, a new generation panel to exceed the properties of Gillfab 4323.



Gillfab™ 4223 offers many of the same properties but differed with a thicker top facing (0.045″ vs. .030″), heavier density Nomex® honeycomb core (9.0 pcf vs. 6.0 pcf) and qualification to Airbus Industrie Technical Specification No. 5360 MIM 000500, issue 3 (BCC2). The changes resulted in a dramatic increase in strength and impact resistance for a more durable cargo floor panel.

Released in 1997, Gillfab 4223 is strong, durable and a decidedly better solution for Airbus' bulk cargo areas. Gillfab 4223 offered Airbus operators a superior alternative to the aluminum-faced OEM design. Plus, all-composite construction eliminated problems associated with the aluminum overlay (e.g., corrosion, de-lamination and sharp edges).

M.C. Gill Corporation's R&D group promised to undertake the arduous task of developing a bulk cargo floor panel with properties that would exceed the latest Airbus Industrie Technical Specification. In March 2008, M.C. Gill Corporation delivered on that promise with the release of Gillfab™ 4523.

Gillfab 4523 is a low smoke sandwich panel with facings of modified phenolic resin reinforced with a combination of woven and unidirectional glass



fibers and Nomex honeycomb core. This panel has very high impact resistance, low toxicity and burnthrough resistance and is qualified to Airbus Industrie Technical Specification No. 5360 MIM 000500, Issue 6 (BCC3), FAR 25.853 and ABD 0031. The amazing new panel shows a 71% increase in impact strength (over Gillfab 4223) with a minimal 3% increase in weight. Its impact resistance far exceeds anything else on the market, making it the most durable product of its kind. Gillfab 4523 is ideally suited for the rough treatment it will endure in the bulk cargo hold area, meaning more flights between repairs. Another key benefit is that the inserts qualified for Gillfab 4523 are the same as those for Gillfab 4223. As a result, change-outs will be seamless.

Rigid testing shows that Gillfab 4523, our next-generation bulk cargo floor liner, is a step ahead of similar products and exceeds Airbus Specifications by 33%. More information will be available by mail, on our website and at our trade show booths at upcoming industry shows.

Please stop by to learn more at the following shows:

### SAMPE

Long Beach, California May 18-22, 2008

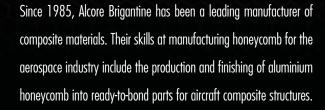
Farnborough IIIK

Farnborough, UK July 14-20, 2008

# ALCOREBRIGATINE DOGGES MACHINING CAPABILITIES

N636) in early April, 2008.





Alcore Brigantine has announced expansion of its existing facilities

for machining non-metallic honeycomb core (Nomex® and Kevlar®



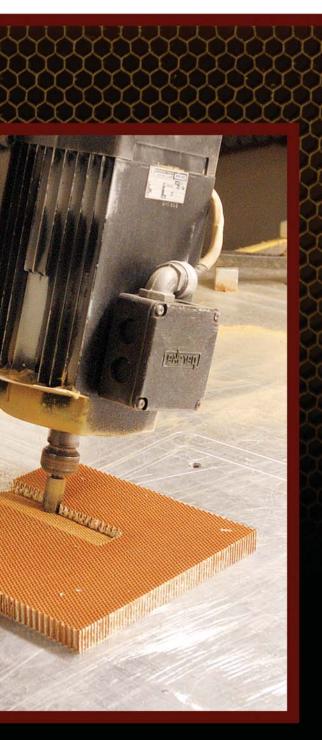
Alcore Brigantine has two plants dedicated to honeycomb machining that are equipped for five-axis milling and shaping of aluminum honeycomb finished parts. The expansion of their new facilities will accommodate a separate area dedicated to machining of non-metallic honeycomb Nomex and Kevlar products.



These enhancements will allow Alcore Brigantine to supply machined aluminum and non-metallic honeycomb core details that are qualified to a wide range of aerospace qualifications.



# THE M.C. GILL GROUP OF COMPANIES



# FOR MORE INFORMATION

about Alcore Brigantine's capabilities please contact
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sales@alcorebrigantine.fr.



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Alcore Overnight™ Expedited Delivery

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



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# **Things to Ponder**

Give a person a fish and you feed them for a day; teach a person to use the Internet and they won't bother you for weeks.

All of us could take a lesson from the weather. It pays no attention to criticism.

Money isn't everything. There's MasterCard and Visa.

Success is a relative term. It brings so many relatives.

If man evolved from monkeys and apes, why do we still have monkeys and apes?

Can vegetarians eat animal crackers?

What was the best thing before sliced bread?

Never underestimate the power of stupid people in large groups.

The older you get, the better you realize you were. If the #2 pencil is the most popular, why is it still #2?



# **Funny Signs**

### Plumber:

"We repair what your husband fixed."

# Pizza shop slogan:

"7 days without pizza makes one weak."

### At a towing company:

"We don't charge an arm and a leg. We want tows."

# In a non-smoking area:

"If we see smoking we will assume you are on fire and take appropriate action."

# At an optometrist's office:

"If you don't see what you're looking for you've come to the right place."

### At a car dealership:

"The best way to get back on your feet – miss a car payment."

### Airline Announcements to Remember...

"As we prepare for takeoff, please make sure your tray tables and seat backs are fully upright in their most uncomfortable position."

"Your seat cushions can be used for flotation devices, and in the event of an emergency water landing, please take them with our compliments."

"Should the cabin lose pressure, oxygen masks will drop from the overhead area. Please place the bag over your own mouth and nose before assisting children or adults acting like children."

"As you exit the plane, please make sure to gather all of your belongings. Anything



# Outside a muffler shop:

"No appointment necessary, we hear you coming."

# In a veterinarian's waiting room:

"Be back in 5 minutes, Sit! Stay!"

### In a counselor's office:

"Growing old is mandatory, growing wise is optional.

# On a Tennessee highway:

"When this sign is under water, this road is impassable."

## In front of a New Hampshire car wash:

"If you can't read this, it's time to wash your car."