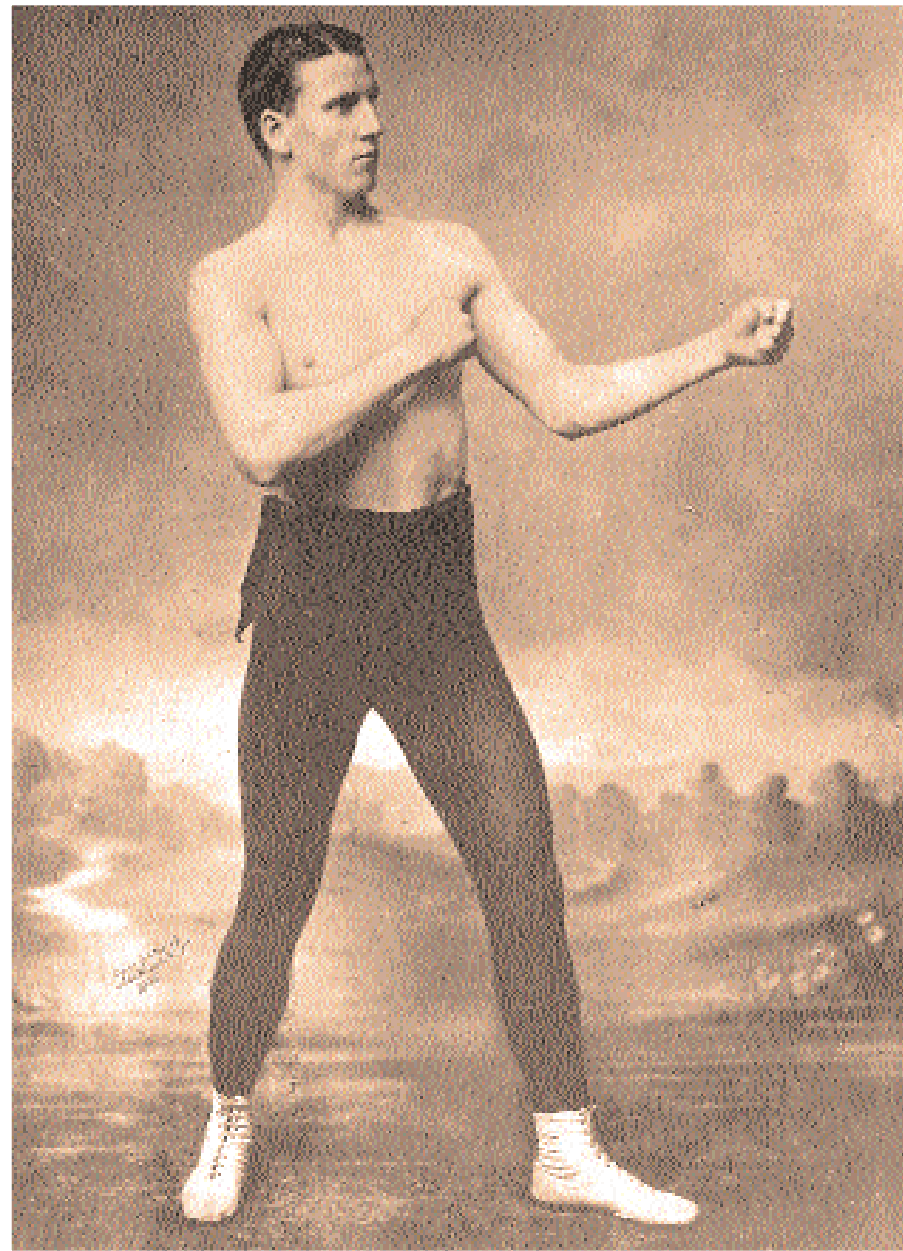


VOLUME 27
WINTER 1994
NUMBER 1



THE M.C. GILL DOORWAY

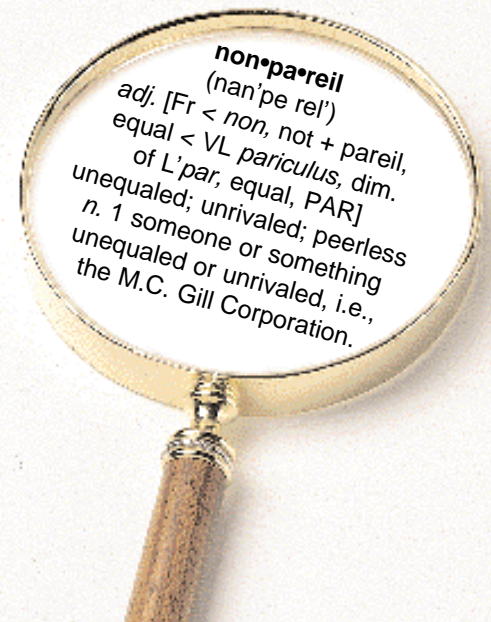
M.C. GILL CORP., 4056 EASY ST., EL MONTE, CA 91731 • PHONE (818) 443-4022 • FAX (818) 350-5880 • FAX (818) 279-6051



JACK DEMPSEY

The Nonpareil
1862-1895

WORLD
MIDDLEWEIGHT
CHAMPION
1884-1891





The Nonpareil

The Boxer on the cover? It's the original Jack Dempsey. No, not the former heavyweight champion of the twenties remembered for his fight with Gene Tunney and the famous long count. He's pictured in the Doorway cover inset. The first Jack Dempsey was a middleweight boxer just before the turn of the century. He was World Middleweight Champion from 1884 to 1891 and boxing fans called him "The Nonpareil" because no one could be found that could beat him.

Which is exactly what the first Jack Dempsey (the Nonpareil) had in common with M.C. Gill—they're both one of a kind. Both considered champions in their field: both believing in persistence, "A champion never quits," quoting the Nonpareil once and M.C. Gill often; and both consistently bring skill and character to both their chosen endeavors.

The former was the **ONLY** Middleweight champion of his day. The latter is the only **Heavyweight** source of today for all four of Airbus Industrie's (AI) current models (A300, A310, A320, and A321) and their derivatives for non-OEM replacement flooring. The successful completion of an exhaustive and comprehensive quality audit by Deutsche Aerospace Airbus (DA—an Airbus Industrie partner with responsibility for floor panels) occurred on June 14, 1993. On that date, the M.C. Gill Corporation became the sole composites manufacturer outside of Europe that has full approval to DA's QSF-C quality system which is the equivalent to ISO-9001, as the latter would relate to Airbus products only.

THE AIRBUS FAMILY AND

A CLOSE RELATIONSHIP

Unlike some other airframe manufacturers, flooring panels are structural components in Airbus Industrie aircraft. Therefore, only sources approved by DA should be used in those aircraft and the M.C. Gill Corp, is the only U.S. supplier that has approval for both passenger and cargo compartment replacement flooring. Most importantly, it also means that materials purchased by airlines or repair stations from a non-qualified supplier can result in rejection of warranty and/or product liability claims. Finally, because the flooring is structural, replacement parts must also have certification—through Airbus—from the FAA and JAA.

QUALIFICATION... IT WASN'T EASY

On November 15, 1991, DA granted conditional approval of M.C. Gill's Quality Assurance Program compliance with QSF-C. It was a day to remember, but not for long because a lot of work remained to be done. DA had granted only conditional approval and had left M.C. Gill's R&D and Quality Assurance groups with a long list of items that required an all out effort to complete.

Almost two years of research, development, testing and supporting documentation by M.C. Gill R&D personnel went into the A320/A321 final qualification process (Gillfab® 4105, Ty 1 and Ty 2 were qualified for the A300/A310

prior to the completion and establishment of DA's QSF-C Quality Audit process). It was a joint effort on the part of DA and M.C. Gill, so included in that time frame were several months that Airbus personnel spent reviewing documentation and testing production samples supplied by our staff for the three A320/A321 flooring panels (one for passengers, one for bulk cargo, and one for containerized cargo).

Then came the site visit. A Quality Assurance Engineer-Parts, Materials, Processes was on site for a week and he was joined for two days by a Quality Assurance Engineer-Procurement. They talked with Research and Development personnel, Quality Assurance and Production personnel. There was no detail too insignificant, no process too minor. It seemed as though they were intent on covering one item or another with every M.C. Gill employee that was even remotely associated with the quality of Airbus panels.

DOCUMENT, DOCUMENT, DOCUMENT

DA had told us that the products met all the required specifications and were qualified as replacement parts for the A320/A321. However, to keep that qualification we had to provide extensive documentation to satisfy DA's QSF-C Quality Audit.

- Documentation of the raw materials we received and the steps we took to ensure they met AI's specifications.

M.C. GILL CORPORATION

- Documentation of the processing steps we took to manufacture the products.
- Documentation of what our Quality Assurance Department did in the testing of the products and how they went about it.

ACCOUNTABILITY AND TRACEABILITY

Essentially, what DA had asked us to do was to create a Quality Assurance paper trail that would provide accountability and traceability for the flooring panels. Remembering all the work that had gone on before to obtain conditional approval and not wanting to see it go for naught, we set about preparing the required documentation.

Suffice to say, there was a considerable amount of midnight oil burned before we notified DA officials we believed we were ready

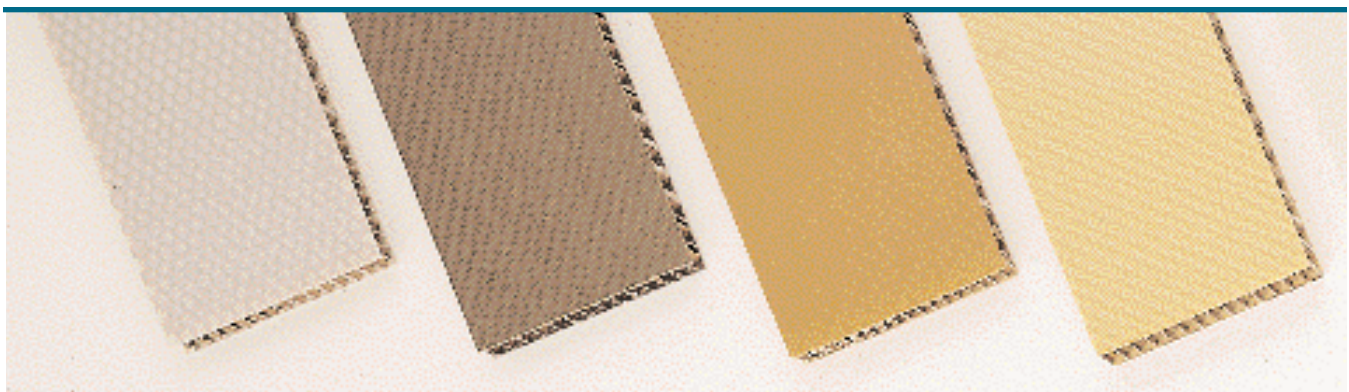
for the final audit. After a series of meetings that lasted two days (but seemed much longer to those involved), the verdict was in—we passed Deutsche Aerospace Airbus' QSF-C quality system and received unconditional qualification!

The DA examiner was very complimentary to those involved in the final audit and mentioned that we should be proud of not only having achieved qualification but to be the first in North America to do so. DA's QSF-C quality system has been called the equivalent to ISO-9001, when in fact many consider it somewhat more rigorous and less forgiving than the latter.

THE END RESULT

The three panels that passed Airbus Industrie's demanding specifications are Gillfab 4205, Gillfab 4322 and Gillfab 4323.

Gillfab 4205 is approved for use in the passenger and cockpit compartments of the A320 and A321. It is a low smoke sandwich panel with facings of phenolic resin reinforced with woven glass/unidirectional graphite bonded to an aramid honeycomb core. It has high strength and rigidity, corrosion resistant facings, light weight, and low smoke and toxic emission in a fire. 4205 is available in specified .374" thickness with length and width per customer specification (48" wide and 144" length maximum). The core is 6.0 pcf density with 3/16" cell size.



Gilfab 4105

Ty 1—Woven E glass cloth reinforced epoxy resin facings/aramid honeycomb core. Used in passenger, cockpit, and cargo compartments.

Gillfab 4205

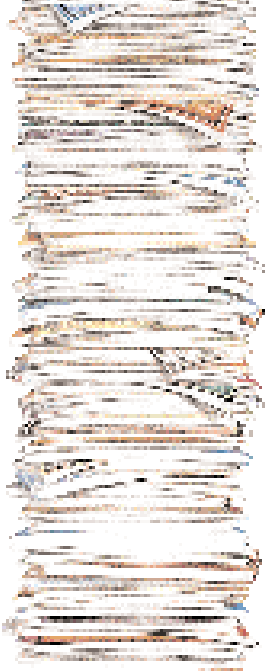
Woven glass fiber, unidirectional carbon fiber reinforced phenolic resin facings/aramid honeycomb core. Used in passenger and cockpit compartments.

Gillfab 4322

Glass fiber reinforced phenolic resin facings/aramid honeycomb core. Used in containerized cargo compartment.

Gillfab 4323

Glass fiber reinforced phenolic resin facings/aramid honeycomb core. Used in bulk cargo compartment.



DOCUMENT, DOCUMENT, DOCUMENT

smoke emissions characteristics in a fire.

The primary difference in the two panels is that Gillfab 4323 has thicker facings and core than Gillfab 4322 because it is subject to more wear and tear. The former is .496" thick and the latter .374". Length and width are per customer specification with 60" width and 96" length typical, although we have made 144" lengths. The core of both panels have a 6.0 pcf density and 3/16" cell size.

STRONG, RIGID, CORROSION RESISTANT, LIGHT WEIGHT, LOW SMOKE, LOW TOXICITY

In addition to Airbus Technical Specification Number 5360 M1B 000100, all three of the above panels also meet or exceed the requirement of the Federal

Aviation Administration's (FAA) FAR Part 25, Appendix F. Part III, and ATS 1000.001 which are concerned with smoke density and toxicity.

As mentioned previously, **Gillfab 4105, Type 1 and Type 2** were qualified prior to DA's adoption of the QSF—C. Therefore, both panels meet the TL 53/5000/79 specification as well as the FAA's FAR 25.853a. Both are designed for use as flooring in the passenger, cockpit, and cargo compartments of the A300 and A310.

Both panels are made with facings of fiberglass cloth reinforced epoxy laminate bonded to an aramid honeycomb core. They are identical except that 4105 Type 2 has a film of aluminum foil bonded to the bottom facing. Both have high

Gillfab 4322 and Gillfab 4323 are designed for use in the cargo compartments of the A320 and A321. 4322 is used in the containerized cargo compartment and 4323 in the bulk cargo section. Both panels are low smoke, constructed of phenolic resin woven fiberglass reinforced plastic bonded to an aramid honeycomb core. Both have high impact facings, are light in weight, and have low toxic and

TABLE 1 – PROPERTIES OF SELECTED M.C. GILL SANDWICH PANELS⁽¹⁾

PRODUCT	Core type and density	Adhesive	Top facing	Bottom facing	Panel thickness (inches)	Panel weight (lbs/ft ²)	Distributed Surface Load (lbs)			Concentrated load without deformation (lbs)	Impact Strength (ft-lbs)
							0.43" DEFL. (inches)	0.67" DEFL. (inches)	Ultimate Load		
TEST METHOD							Airbus Industrie TL 53/5000/79 (Gillfab 4105) DAA/MBB/AI 5360 M1B 000100 (Gillfab 4205, 4322, and 4323)				
4105	3/16" cell, 6 pcf Aramid honeycomb	Modified epoxy	.025" woven FRP epoxy	.025" woven FRP epoxy	.375	.66	NA	NA	2850	> 200	NA
4205	3/16" cell, 6 pcf Aramid honeycomb	Modified epoxy	.025" Fiberglass fabric/carbon fiber	.025" Fiberglass fabric/carbon fiber	.374	.67 max.	1000	1750	4250	> 192	NA
4322	3/16" cell, 6 pcf Aramid honeycomb	Modified epoxy	.024" Fiberglass/phenolic	.022" Fiberglass/phenolic	.374	.68	NA	> 1414 ⁽⁴⁾	3500	> 200	7.0
4323	3/16" cell, 6 pcf Aramid honeycomb	Modified epoxy	.030" Fiberglass/phenolic	.020" Fiberglass/phenolic	.496	.76	NA	> 2434 ⁽⁴⁾	5000	> 200	9.0

Notes: FRP means glass reinforced plastic. NA means not applicable. (1) Typical Properties, not to be used for specification purposes.

impact, corrosion resistant facings and are light in weight. The data in Table 1 show the physical and mechanical properties of the four Airbus panels.

FIRST... AGAIN

The M.C. Gill Corporation is both pleased and proud to achieve another on a long line of firsts in our field in the commercial aviation industry—the only company to have qualified replacement flooring panels for the first four Airbus aircraft and their derivatives.

We are especially gratified because Deutsche Aerospace Airbus has established a very challenging list of criteria for qualification and inclusion in their prestigious line of commercial aircraft. We believe that our competent experienced personnel, modern equipment and production methods, and a resin chemistry capability second to none

are among our strong points. And, of course, there is no substitute for 48+ years of experience! If there was any doubt, we believe that achieving our *nonpareil* first with Deutsche Aerospace Airbus should satisfy even the most skeptical.

Conclusion...

When M.C. Gill completed his review of this article, he made the following observations:

“Although this is an accurate account of the extent of the work we did, I doubt that our trials and tribulations will be all that interesting to our readers. They want to know what’s in it for them. The price of the panel is secondary to the peace of mind where such a structural component is concerned, especially these days where, all too frequently, replacement parts are

frauds. They should realize that Airbus and other OEMs don’t just qualify any vendor who doesn’t have the necessary experience. The preceding pages tell what is necessary to qualify. But they also tell our readers that the result of all this work is that they now have a fully qualified source for Airbus flooring panels to depend on for consistent quality, expedited delivery and competitive pricing—from a company that’s been in the business since 1945. A company where they can buy with confidence and be comfortable with the choice. It’s the best of both worlds. That’s the real definition of ‘nonpareil’! Tell’em that, that’s what they want to know!”

Consider it done, M.C.

TABLE 1 – PROPERTIES OF SELECTED M.C. GILL SANDWICH PANELS⁽¹⁾ – CONTINUED

Compressive Fatigue 2 x 10 ⁶ cycles	In-Plane panel shear (lbs force)	Bending fatigue lower limit 34 lbs upper limit 337 lbs 2 x 10 ⁶ cycles	Roller cart (test cycles to failure)	Insert pull-out (lbs)	Flammability	Smoke D _s Flaming 90 sec Flaming 240 sec Non-flaming 90 sec Non-flaming 240 sec	Toxic Gas Emmission ⁽²⁾	Heat Release	Oil Burner ⁽³⁾
Airbus Industrie TL 53/5000/79 (Gillfab 4105) DAA/MBB/AI 5360 M1B 000100 (Gillfab 4205, 4322, and 4323)					DAA/ATS 1000.001		FAR 25.853/855		
NA	28,000	NA	> 128 lbs– 120,000 > 158 lbs– 35,000	1700	Pass	NA	NA	NA	NA
Pass	23,000	Pass	> 128 lbs– 120,000 > 158 lbs– 35,000	1900	Pass	13 34 1 2	Pass	44.4/ 44.3	NA
NA	NA	NA	NA	1600	Pass	26 63 1 3	Pass	45.3/ 45.4	Pass
NA	NA	NA	NA	1600	Pass	51 83 1 7	Pass	43.6/ 37.0	Pass

(2) Per DAA/AI Specification ATS 1000.001.

(3) Per FAR Part 25, Appendix F, Part III.

(4) Minimum load without permanent deformation.



Your One-Stop

**ESPECIALLY NOW WITH
IN ALL BOEING**

DON'T LOOK FOR ANY ONE-CENT SALES OR MIDNIGHT MADNESS BARGAIN EXTRAVAGANZAS, BUT THE M.C. GILL CORPORATION IS OFFERING A "ONE CARGO LINER FITS ALL".

To the best of our knowledge, Gillfab 1367A is the first baggage compartment liner qualified as original equipment and replacement stock for Boeing and McDonnell Douglas commercial aircraft.

1367A NOW MEETS DOUGLAS DMS 2419

On February 17, 1994, Douglas notified its operators that it had completed its qualifications on DMS 2419, an improved lighter weight cargo liner material that features strength and impact resistance equivalent to DMS 2226 material. The DMS 2419, Class 1 material will become the production standard on the MD-80 and MD-90 effectively with fuselages 2090 and 2018 respectively. Moreover, operators were advised that Douglas had no

technical objection to using: DMS 2419, Class 1 material (1367A) interchangeably with DMS 2226, Type 1 material (1167) or replacing DMS 1946 material (1100/1100G) with either material.

1367A IS ALSO QUALIFIED TO BOEING'S BMS 8-223, CLASS 2

It is used as original equipment in all Boeing 700 series aircraft. Moreover, it is approved for use as replacement material in those aircraft.

ONLY ONE TO KEEP IN STOCK

The import of the recent Douglas qualification, when coupled with Boeing's, is that approximately 70 airlines flying both types of aircraft now need only stock one cargo liner for a replacement part. In addition to the weight savings, other advantages are:

- Simplified purchasing—less paperwork, only one phone call or fax to reorder;

The Rotocure continuously presses high quality laminates (primarily cargo liners) up to 60" wide and trims to exact width. It gives us the choice of producing roll stock or sheeted material off the output end.



Cargo Liner Shopping Center

GILFAB 1367A APPROVED FOR REPLACEMENT AND McDONNELL DOUGLAS AIRCRAFT

- Simplified receiving—also less paperwork, only one order to receive at a time;
- Simplified inventory control—also less paperwork, less physical space required;
- Simplified accounting—also less paperwork (is there a pattern here?), fewer checks or letters of credit to process; and
- Simplified maintenance—eliminates confusion over which material to use in which aircraft, reduces scrap and waste.

LOW SMOKE AND LOW TOXIC EMISSIONS, TOO

Gillfab 1367A is constructed of fiberglass reinforced phenolic resin with a one mil white Tedlar® overlay on the face side. Like its predecessors at Boeing (Gillfab 1367) and Douglas (Gillfab 1167), the use of phenolic resin in 1367A means low smoke and toxic emissions in a fire. *Gillfab 1367A was developed specifically to*

meet requests for a lighter weight cargo liner with no loss in serviceability when equivalent thicknesses are used.

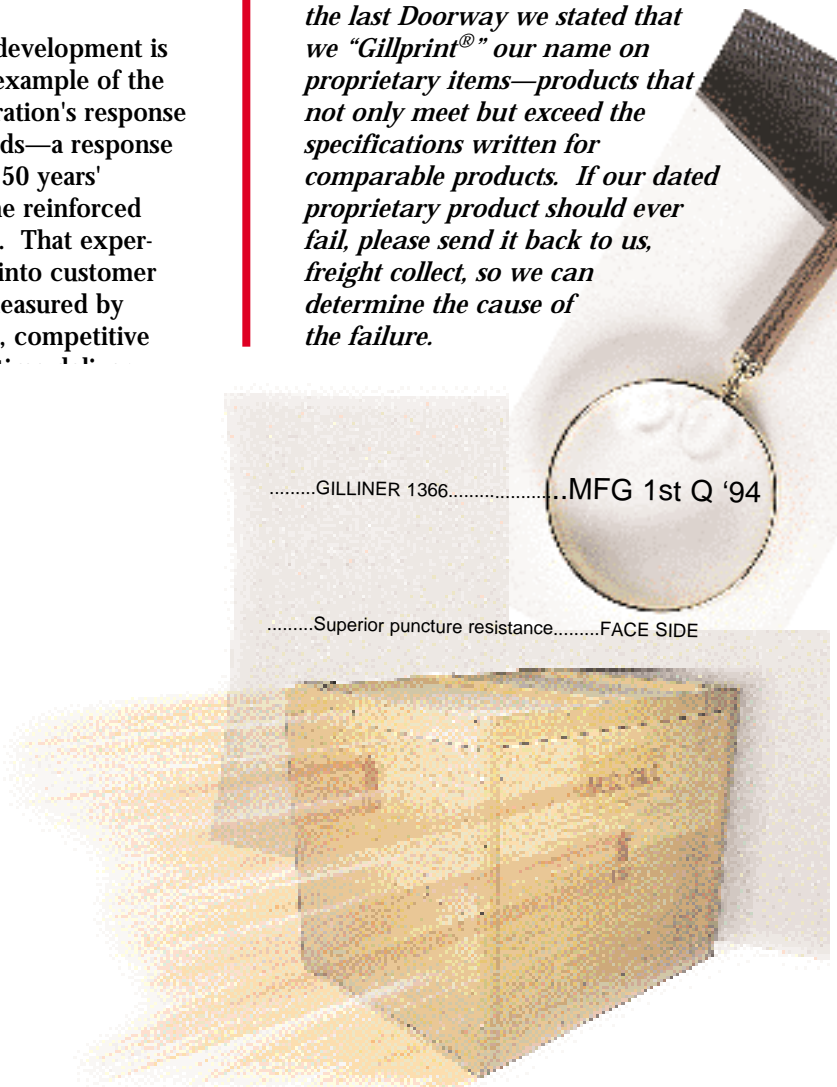
Conclusion...

Gillfab 1367A's development is simply another example of the M.C. Gill Corporation's response to customer needs—a response borne of almost 50 years' experience in the reinforced plastics industry. That experience translates into customer satisfaction as measured by quality products, competitive pricing, and "..."
We couldn't business this offering our all three!

In the last Doorway we mentioned date stamping our products. We've been doing this for many years and the illustration below shows what to look for. Also, in the last Doorway we stated that we "Gillprint®" our name on proprietary items—products that not only meet but exceed the specifications written for comparable products. If our dated proprietary product should ever fail, please send it back to us, freight collect, so we can determine the cause of the failure.

.....GILLINER 1366.....MFG 1st Q '94

.....Superior puncture resistance.....FACE SIDE



THE FUNNY SIDE

The World According To Parents
(as seen through a child's eyes):

"I hope I'm still alive when your kids turn 16."

"Stop doing that—you might poke your eyes out."

"How many times have I told you..."

"All you had to do was pick up the phone and call us."

"This is going to hurt me a lot more than it's going to hurt you."

"Do it to make your mother happy."

"No I'm not sleeping. I'm just resting my eyes."

"When I was your age I walked 26 miles to school one way through a blizzard, hail storms and 110 degree heat. NOW GO!"

Two can live as cheaply as one if both are working.

★★★★★

Whoever said, "It's only a game" probably just lost one.

★★★★★

People who claim they can take it or leave it probably never had it.

★★★★★

The squeaky wheel doesn't always get greased; sometimes it gets replaced

★★★★★

Man is a creature who can't wait ten minutes for a woman, but who will sit motionless for hours for a small fish.

★★★★★

The doctor was having a heart-to-heart talk with a very obese patient. "You're going to have to give up those intimate little dinners for two until you have another person to eat with."

Trivia

Twenty-seven percent of American coffee drinkers consume at least 10 cups per day.

★★★★★

It takes the average American car one year to produce its own weight in carbon.

★★★★★

Forty percent of all dogs in this country are overweight.

★★★★★

Frogs have teeth, toads do not.

★★★★★

There are 221 oil wells in Iran and 635,015 in the U.S. Each Iranian well produces 624 times as much as an American well.

★★★★★

The diameter of our sun, a dwarf star, is 865,000 miles. Earth's diameter is 7,900 miles.

During any given year over Australia, evaporation exceeds rainfall.

★★★★★

524,160 persons per year are given either the wrong medicine or an incorrect dosage of medicine while in the hospital.

★★★★★

A penguin can swim faster than a salmon.

★★★★★

The average American spends five years of his life spending:

...six months sitting at traffic lights

...one year searching for misplaced objects

...eight months opening junk mail

...four years doing housework

...two years trying to return phone calls to people who never seem to be in.



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