

# The Hard Copy Supplies Journal



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Advice and Insight

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## Canon Names GCC Group and TallyGenicom in IP Suit

### Highlights

- Canon alleges that GCC Group companies and TallyGenicom have infringed its '018 patent.
- The suit comes despite GCC's claims of exhaustive due diligence.
- Canon's complaint is the latest in a string of suits brought against office-superstore suppliers.

On May 1, Canon filed suit against various units of the GCC Group and TallyGenicom, one of the Hong Kong-based cartridge maker's North American distributors. Canon alleges that the defendants market products that use infringing technology to rotate OPC drums in toner cartridges to ensure that the drum is synchronized with a printer or fax machine. GCC Group manufactures and markets 100 percent new toner cartridges for print engines from Canon and other printer OEMs, and it is widely believed that the firm is a major supplier of Staples-branded toner cartridges.

Canon has been relatively quiet about the lawsuit, which was filed in the U.S. District Court for the Southern District of New York. The firm did not issue a press release on the matter, and there is no mention of the lawsuit on either Canon's corporate Web site or its Canon U.S.A. site. According to court records, it appears the complaints were filed and served to the defendants without a cease-and-desist notice. Richard Butler, a Canon spokesperson, confirmed that his company is seeking relief from the U.S. courts to resolve its complaint against the GCC Group and TallyGenicom. "Canon Inc. filed this patent-infringement lawsuit in the United States on May 1, seeking an injunction against the

manufacture and sale of the infringing cartridges and unspecified damages," he said.

Chris Mercer, CEO of Green Cartridge Company Limited, the parent company of the GCC Group, expressed confidence that his firm has not infringed Canon's patent. In a prepared statement, he claimed, "We have utmost respect for other parties' intellectual property, and we go to great lengths and great expense to ensure that we do not infringe any valid intellectual property unless we are properly licensed."

Mercer explained that before GCC releases a product in the United States, the product is reviewed by the Boston, MA-based law firm Wolf, Greenfield, and Sacks, which he described as "devoted to the practice of intellectual-property law." According to the press release, the firm reviewed the Canon patent in question and verified that GCC did not infringe it. Mercer said, "We have complete faith in the integrity of the patent system in the United States, and we look forward to establishing in court that indeed our design does not infringe Canon's rights."

### The '018 Patent

Canon claims that the defendants manufacture and market laser printer and fax toner cartridges that infringe on intellectual property protected by U.S. patent number 6,336,018. The OEM filed for the U.S. patent in September 1997 after being granted a similar patent in Japan one year earlier. The U.S. patent, entitled "Electrophotographic Image Forming Apparatus, Process Cartridge, and Drive Mount for Photosensitive Drum," was issued on January 1, 2002.

The so-called '018 patent pertains to the manner in which an OPC drum in a toner cartridge is rotated using a motor that is

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## WIR Testing Finds Aftermarket Inks Are Inferior to OEM

### Highlights

- Test results from Wilhelm Imaging Research indicate that the image permanence of photos printed with aftermarket products is far inferior to those printed with OEM SKUs.
- Aftermarket inks appear to perform at a level comparable to OEM inks from the late 1990s.
- While not all firms agree with the lab's methodology and procedures, WIR display-permanence ratings have become the industry's de facto standard.

Wilhelm Imaging Research (WIR) has conducted tests of photo image permanence that show that aftermarket products do not perform as well as comparable OEM products. The testing was performed as part of the Grinnell, IA-based laboratory's ongoing evaluation of various printing technologies to establish how they perform relative to WIR display-permanence ratings. The study examined a range of store-brand ink jet cartridges, ink jet cartridges refilled at franchise refill shops, and other aftermarket ink sets along with third-party photo papers. It also compared the permanence of photos printed with aftermarket products to those printed

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## Financial Reports

**Lexmark ...** of ink jet printers with most of that coming from unprofitable bare-bones printers." Laser printer unit sales increased during the quarter, although revenue from the sale of these devices decreased due to price declines. Business segment revenue fell 5 percent year-over year to \$688 million, while consumer segment revenue fell 7 percent to \$587 million.

	Period*	Revenue	Net Income
OfficeMax	Q1 2006	\$2.4B	(\$25.1M)
	Q1 2005	\$2.3B	(\$5.3M)

Comments: "Our first-quarter 2006 operating results were quite strong, including substantial gross-margin expansion and strong expense control in both our contract and retail segments," said Sam Duncan, chairman and CEO. Sales in the retail segment benefited from positive same-store sales in nearly every product category and continued strength in print and document services.

	Period*	Revenue	Net Income
Ricoh	FY2006	¥1.9T	¥97.1B
	FY2005	¥1.8T	¥83.1B

Comments: Ricoh's group net profit rose 16.7 percent to a record high in fiscal 2006 due to strong sales of MFPs and efforts to reduce costs. Group sales rose 5.6 percent to ¥1.92 trillion from ¥1.81 trillion one year earlier, while operating profit climbed 12.2 percent to ¥152.0 billion.

	Period*	Revenue	Net Income
Samsung	Q1 2006	KRW 14.0T	KRW 1.9T
	Q1 2005	KRW 13.8T	KRW 1.5T

Comments: Samsung's first-quarter net profit rose 26 percent year-over-year on strong demand for large flat-screen televisions. Sales in its LCD business grew 41 percent to KRW 2.68 trillion. Operating profit decreased 25 percent compared with the year-ago period, with the firm citing strength in the South Korean won and falling prices for products such as flash memory chips used in digital music players.

	Period*	Revenue	Net Income
Sappi	Q2 2006	\$1.3B	\$9.0M
	Q2 2005	\$1.2B	\$40.0M

Comments: Commenting on the results, Sappi Chairman Eugene van As said, "We are enjoying strong demand growth in our major markets and operating rates are at some of the highest levels that I have seen. Despite the healthy supply/demand conditions we have so far had limited success in raising prices for coated fine paper in Europe and in the U.S. The price increases that have been achieved have been dwarfed by input cost increases—price increases for wood, energy, and chemicals this quarter alone increased our costs by U.S.\$38 million compared to a year ago."

	Period*	Revenue	Net Income
Seiko Epson	Q4 2005	¥374.2B	(¥25.8B)
	Q4 2004	¥366.5B	(¥4.3B)
	FY2005	¥1.5T	(¥17.9B)
	FY2004	¥1.5T	¥55.7B

Comments: Seiko Epson reported a net loss of ¥17.9 billion in fiscal 2005, citing falling prices for electronic devices and ink jet printers. In the imaging and information products business, total revenue grew slightly. Although ink jet printer and supplies revenue

## WIR findings ...

(continued from page 1)

with inks and photo papers from Canon, Epson, and HP using the respective OEMs' consumer photo printers (*see table on page 7*).

"As a group, the aftermarket inks and premium photo papers in this study had among the lowest WIR display-permanence ratings of any products ever tested by our lab," says Henry Wilhelm, WIR's president and founder. Wilhelm is an expert on image permanence and has worked on various issues related to the display and preservation of photographic prints with a number of groups including the Museum of Modern Art in New York. Since 1995, he has been an advisor to the Corbis Bettmann photography collection, which is owned by Bill Gates and contains more than 65 million images.

"Aftermarket inks and media have generally been advertised as providing equal or better quality than the OEM products but at lower prices," Wilhelm observes. "However, if one includes print permanence as an important aspect of overall product quality, then the aftermarket photo inks and media we looked at in this study fall far short indeed. The photo inks and papers marketed by HP, Canon, and Epson performed far better." He cites the example of the 73-year WIR display-permanence rating for photos printed using the HP 57 and 58 photo cartridges on HP Premium Plus Photo Paper. "That rating was more than 35 times higher than the best of the refilled 57 and 58 cartridges printed on the aftermarket photo papers," Wilhelm says.

### Aftermarket Testing

The test photos used in WIR's most recent study were printed using store-brand ink jet cartridges from Office Depot, OfficeMax, and Staples, as well as cartridges that were either refilled with ink or purchased at Caboodle Cartridge, Cartridge World, Island Ink-Jet, and Rapid Refill Ink retail shops. The study also tested cartridges from Carrot Ink that were purchased over the Internet. "The cartridges were all purchased over the counter, and we verified each was printing satisfactorily using our test pattern before printing the calibrated test target," Wilhelm explains.

Whenever possible, WIR matched the highest grade of a brand of photo paper with the same brand of ink cartridge. For example, Staples-branded ink cartridges were used with Staples' own "Photo Supreme Paper." Caboodle Cartridge, Carrot Ink, and Rapid Refill Ink do not offer their own branded photo paper. WIR matched Staples Photo Supreme Paper with the ink cartridges from the refill shops. Because Carrot Ink recommends Kodak ink jet media, WIR tested cartridges from Carrot Ink with Kodak's recently introduced "Ultra Premium Photo Paper," which marked the first time that paper was subjected to a WIR test. To determine what influence the paper had on the test photos, each aftermarket ink was also tested using Canon, Epson, and HP premium photo papers and matched to the printer outputting the photos.

Some vendors, most notably Kodak, have scrupled with WIR's testing methods. The WIR protocol mandates that its accelerated glass-filtered fluorescent light stability tests are conducted at 75°F, and the data is extrapolated to a display level of 450 lux of light for a period of 12 hours per day. The lab has determined that these conditions are equivalent to a typical well-lit room. Kodak has maintained that 450 lux is an excessive standard and uses 120 lux for its testing. Other conditions of Kodak's testing standards were released at the IS&T Photofinishing Symposium in February 2004.

We note the debate between WIR and Kodak to point out that not everyone agrees with all the results that come out of the lab in Grinnell. We expect some aftermarket ink manufacturers will dispute its most recent findings. Although Wilhelm acknowledges that there is some debate about WIR's methodology, he insists it is sound. "There are no ISO or ANSI standards for permanence, so our company's standard has become the de facto industry standard." (*For more details on WIR's methodology, visit www.wilhelm-research.com*.)

### Different Kinds of Quality

Wilhelm indicates that aftermarket ink vendors are still in the early phases of developing inks capable of photo printing. "The aftermarket is about where the big four printer companies [Canon, Epson, HP, and

## WIR Display Permanence Ratings for Genuine HP, Canon, and Epson Photo Inks and Papers Compared with WIR Ratings for Store Label and Other Aftermarket Photo Inks and Papers

	Displayed Prints Framed Under Glass (450 lux/12 hours per day)
Genuine HP 57 & 58 photo cartridges printed on "HP Premium Plus Photo Paper"	73 years
Office Depot refilled HP 57 & 58 photo cartridges printed on "Office Depot Professional Photo Paper"	0.4 years
Office Depot refilled HP 57 & 58 photo cartridges printed on "HP Premium Plus Photo Paper"	1.4 years
Island Ink-Jet refilled HP 57 & 58 photo cartridges printed on "Island Ink-Jet Professional Quality Photo Paper"	0.7 years
Island Ink-Jet refilled HP 57 & 58 photo cartridges printed on "HP Premium Plus Photo Paper"	2.5 years
Caboodle Cartridge refilled HP 57 & 58 photo cartridges printed on "Staples Photo Supreme Paper"	0.4 years
Caboodle Cartridge refilled HP 57 & 58 photo cartridges printed on "HP Premium Plus Photo Paper"	1.5 years
Rapid Refill Ink refilled HP 57 & 58 photo cartridges printed on "Staples Photo Supreme Paper"	1.0 years
Rapid Refill Ink refilled HP 57 & 58 photo cartridges printed on "HP Premium Plus Photo Paper"	5.9 years
OfficeMax refilled HP 57 & 58 photo cartridges printed on "OfficeMax Professional Photo Paper"	1.9 years
OfficeMax refilled HP 57 & 58 photo cartridges printed on "HP Premium Plus Photo Paper"	1.5 years
Genuine HP 95 & 99 photo cartridges printed on "HP Premium Plus Photo Paper"	108 years
Rapid Refill Ink refilled HP 95 & 99 photo cartridges printed on "Staples Photo Supreme Paper"	0.9 years
Rapid Refill Ink refilled HP 95 & 99 photo cartridges printed on "HP Premium Plus Photo Paper"	4.4 years
Caboodle Cartridge refilled HP 95 & 99 photo cartridges printed on "Staples Photo Supreme Paper"	4.6 years
Genuine Canon CLI-8 photo inks printed on "Canon Photo Paper Pro PR-101"	35 years
Genuine Canon BCI-6 photo inks printed on "Canon Photo Paper Pro PR-101"	16 years
Carrot Ink compatible BCI-6 photo inks printed on "Kodak Ultra Premium Photo Paper"	1.1 years
Carrot Ink compatible BCI-6 photo inks printed on "Canon Photo Paper Pro PR-101"	1.6 years
Island Ink-Jet compatible BCI-6 photo inks printed on "Island Ink-Jet Professional Quality Photo Paper"	1.8 years
Island Ink-Jet compatible BCI-6 photo inks printed on "Canon Photo Paper Pro PR-101"	0.2 years
Staples compatible BCI-6 photo inks printed on "Staples Photo Supreme Paper"	2.4 years
Staples compatible BCI-6 photo inks printed on "Canon Photo Paper Pro PR-101"	0.6 years
Cartridge World compatible BCI-6 photo inks printed on "Cartridge World Photo Lab Quality Glossy Photo Paper"	0.6 years
Cartridge World compatible BCI-6 photo inks printed on "Canon Photo Paper Pro PR-101"	0.3 years
Genuine Epson R300/R320 photo inks printed on "Epson Premium Glossy Photo Paper"	23 years
OfficeMax compatible R300/R320 photo inks printed on "OfficeMax Professional Photo Paper"	2.4 years
OfficeMax compatible R300/R320 photo inks printed on "Epson Premium Glossy Photo Paper"	2.3 years

Source: Wilhelm Imaging Research

Lexmark] were when they started photo printing," he explains. "First they have to get image quality right, then they move on to image permanence." Wilhelm claims it is a "relatively simple task to make dye-based ink jet inks if one ignores image permanence." But, he points out, "It is much more difficult to make inks and media that provide both high image quality and a high level of image permanence."

Tests that WIR conducted in the late 1990s using OEM inks showed problems with image permanence similar to the ones found using third-party inks in its latest study. In a report to the International Association of Fine Art Digital Printmakers published in 1999, the lab said that some prints made with

ink and paper combinations from Canon, Epson, and Lexmark would degrade in well under a year. While prints made with HP products proved to be more stable when exposed to light, they could not last 10 years without suffering deterioration. Today, many OEM inks and media are rated in decades rather than years, and some have exceeded the 100-year mark, according to WIR ratings. Printer manufacturers have embraced WIR display-permanence ratings, and some OEMs use product packaging that features these ratings (*Journal, 3/05*).

Wilhelm says that OEMs began focusing on the light stability of their inks and media and on other issues related to permanence once they achieved print qualities that

## Financial Reports

**Epson ...** was adversely affected by price erosion and by lower shipment volumes of single-function printers, revenue benefited from higher unit shipments of ink jet MFPs and a weaker yen. Laser printer prices continued their downward trajectory, although unit shipments increased.

	Period*	Revenue	Net Income
<b>Sharp</b>	FY2005	¥2.8T	¥88.6B
	FY2004	¥2.5T	¥76.8B

Comments: Sharp reported a group net profit of ¥88.6 billion for fiscal 2005, an increase of 15 percent compared with fiscal 2004. Sales reached a record ¥2.79 trillion, up 10 percent from the previous fiscal year. The firm said that sales of LCD TVs grew 33 percent year-over-year to ¥410.7 billion.

	Period*	Revenue	Net Income
<b>Stora Enso</b>	Q1 2006	€3.6B	€226.4M
	Q1 2005	€3.1B	€60.0M

Comments: Stora Enso's first-quarter 2006 results improved as average product prices rose and demand remained strong. Sales increased 14.7 percent in the first quarter compared with the year-ago period due to the impact of the Schneidersöhne acquisition, increased prices in all segments, and increased deliveries in fine paper and packaging boards.

	Period*	Revenue	Net Income
<b>Wausau Paper</b>	Q1 2006	\$283.7M	(\$1.3M)
	Q1 2005	\$267.7M	\$1.9M

Comments: Thomas J. Howatt, president and CEO, commented, "Uncoated freesheet markets have clearly improved from late 2005, with year-over-year demand increasing solidly in the first quarter. These circumstances, coupled with recent capacity closures and intense selling efforts, resulted in substantial gains in our target markets, such as consumer products, where shipments increased 27 percent."

	Period*	Revenue	Net Income
<b>Xerox</b>	Q1 2006	\$3.7B	\$200.0M
	Q1 2005	\$3.8B	\$210.0M

Comments: "Our steady improvement in post-sale revenue shows that Xerox's business model is working. We also delivered solid product install growth, a more than 25 percent increase in signings for document management services, and 11 percent growth in revenue from Xerox digital color systems," said Anne M. Mulcahy, chairman and CEO. Xerox's total office revenue declined 1 percent but grew 1 percent in constant currency. Installations of office black-and-white systems grew 18 percent, largely due to increased placements of Xerox's new line of WorkCenter systems. Installations of office color multifunction systems increased 53 percent.

	Period*	Revenue	Net Income
<b>Zebra</b>	Q1 2006	\$175.8M	\$26.1M
	Q1 2005	\$170.7M	\$25.8M

Comments: In the first quarter of 2006, all three of Zebra's international territories experienced sales growth, with the Europe, Middle East, and Africa region achieving record sales in local currencies. Nearly all printer product lines contributed to 12.5 percent unit volume growth, offset by lower average unit prices. Sales of supplies increased 14.6 percent year-over-year.

were close to silver halide. "OEMs have a leg up on the aftermarket," Wilhelm explains. "Printer manufacturers have optimized their ink and media to perform best as a matched set. The aftermarket offers a one-size-fits-all solution."

According to Wilhelm, WIR subjected the photos printed with the aftermarket products to the exact same test procedures as those printed with the OEM products. "The test methodology used [for the aftermarket products] is precisely the same as what was used to determine the ratings for the HP, Lexmark, Canon, and Epson photos. This gives us a true apples-to-apples comparison."

### Let the Market Prevail

Wilhelm contends that the market will ultimately decide the merits of the aftermarket value proposition. "The market will work these things out," he says confidently. While he is well aware that a segment of the population is willing to sacrifice on quality in order to save on price, Wilhelm is concerned that many consumers are simply unaware of how much they are giving up when they purchase the aftermarket products currently available.

"Image permanence is the 'hidden' attribute of overall product quality," Wilhelm



*Despite Staples' claims, Iowa-based Wilhelm Imaging Research finds that Staples products do not perform as well as those of the OEMs in terms of image permanence*

explains, "The moment a print emerges from the printer, people can immediately assess how bright the colors are, whether or not skin tones are pleasingly reproduced, and have a sense of general image quality. But the intrinsic image permanence provided by a specific ink and paper combination is something you can't see." He suggests that there are implications for consumers. The wide range of image permanence exhibited by the products tested in the lab's latest study suggests that consumers may not know what they are buying. "If meaningful permanence information is not available for the inks and papers purchased by a consumer, he or she will have no idea at all

about how long the prints will last. In this situation, the consumer is flying blind."

Advocating for the end users, Wilhelm points out that most aftermarket firms currently offer no information on image permanence. "It is clear that consumers have no idea just how poor the permanence—and thus the overall quality—of these products actually is," he maintains. "WIR considers the permanence of all of the aftermarket products tested to be unsuitable for printing valued consumer photographs."

We expect aftermarket ink manufacturers will pay close attention to the latest WIR test results. OEMs are using aggressive branding initiatives to differentiate themselves from third-party consumables, and performance has been a big part of the OEMs' branding message. We are certain that OEMs will use WIR's findings to their advantage.

Moreover, just as end users will reject products that do not provide decent print quality, they will certainly not purchase a product twice if the output begins to deteriorate in a few months. The life span of images printed using some aftermarket products is so short that users may see their photos fade before it is time to replace their next cartridge.

In the end, we agree with Wilhelm's assessment—the market will prevail. 

## Laser Technologies to Shutter Plant, Exit Mono Market

Over the past several weeks, we have heard a number of rumors, many of them quite dire, about Exton, PA-based remanufacturer Laser Technologies. We contacted the firm and learned that it is in the process of closing its Pennsylvania plant and that it will no longer market monochrome toner cartridges. However, Laser Technologies is not filing for bankruptcy, as many have suggested. Rather, it is moving its manufacturing operations for color toner cartridges to Tijuana, Mexico.

"Laser Technologies is exiting the monochrome market so it can establish itself as a focused player in color products," says Jason Winkleblech, the firm's director of operations. "It is the direction that the market is going, and it is the direction that offers the most margins." Winkleblech explains that margins for monochrome cartridges have

become razor thin. "We are competing with low-cost manufacturing from offshore plants," he says, adding that wholesalers now demand low prices.

An exploration of how the company might lower its operating costs was the impetus behind Laser Technologies' decision to focus solely on color products and move its manufacturing base. At the beginning of 2005, the firm opened its facility in Mexico, and, as more capacity was available at the plant, lines were transitioned from Pennsylvania to Tijuana. The company maintained its research and development operations in Exton during the transition, but now that group is also moving to Mexico.

Laser Technologies currently uses its Exton plant only for distribution and packaging. Winkleblech estimates the current staff at about 40 employees, down from about 150

workers one year ago. The facility will be closed on June 30, but the firm plans to keep a staff of about 10 sales and marketing employees in Exton at another site.

Winkleblech estimates that Laser Technologies offered approximately 80 monochrome SKUs for various printers. That portfolio will be cut to 23 SKUs for HP color laser devices. John Garrett, senior vice president of sales and marketing, says, "In the next year, we plan to broaden our color offerings substantially." He adds that the firm will market color toner cartridges for Brother, Epson, Konica Minolta, Oki, and Xerox machines. According to Garrett, Laser Technologies does not plan to outsource any of its color cartridges.

Laser Technologies notified customers in early May that it would no longer market monochrome cartridges. The company is

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Source: Wilhelm Imaging Research

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- 1** *WIR Testing Finds Aftermarket Inks Are Inferior to OEM:* Wilhelm Imaging Research has just completed extensive testing of aftermarket inks and has found them to be sorely lacking in terms of light stability and image permanence.

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Charles Brewer Managing Editor  
Jim Forrest Senior Analyst  
Chia-Chi Chang Research Assistant  
Christina Kolb Editorial Manager  
Charles LeCompte Publisher  
Frank A. Stefansson, Jr. CEO and Executive VP



#### Publisher

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#### Editorial and Business Offices

Lyra Research  
P.O. Box 9143  
Newtonville, MA 02460-9143  
tel. 617-454-2600, fax. 617-454-2601  
e-mail (editorial): [cbrewer@lyra.com](mailto:cbrewer@lyra.com)  
e-mail (circulation): [myong@lyra.com](mailto:myong@lyra.com)

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