

Focused on Opportunity

JMAR TECHNOLOGIES 2004 ANNUAL REPORT



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PHOTONICS - the study or application of electromagnetic energy whose basic unit is the photon, incorporating optics, laser technology, electrical engineering, materials science, and information storage and processing.

JMAR - driven to become the number one supplier of the PHOTONICS products it develops and manufactures for multiple vertical markets world wide. The Company develops photonics **solutions** through internal innovation and by teaming with others in industry and academia. The resultant products are taken to **vertical markets** by the combined efforts of JMAR and its alliance partners.

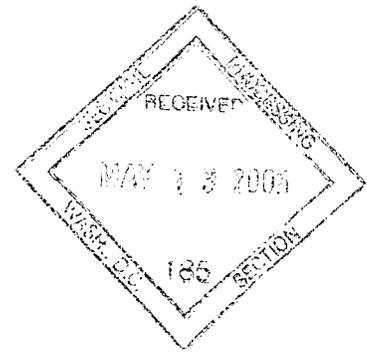
JMAR's Solutions

Light scattering sensor systems for realtime detection of microorganisms in water
High brightness diode pumped solid state lasers
Soft X-ray sources from 1 nm to 10 nm wavelength
Soft X-ray chemical probes to 20 nm resolution
Soft X-ray tools for erosion and deposition at 20 nm resolution
Soft X-ray microscopes for 3D imaging of whole cells to 20 nm resolution
Soft X-ray nanolithography equipment for sub-100 nm, high aspect ratio features
Automated scanning optical microscopes

JMAR's Vertical Markets

Water Quality Analysis
Homeland Security
Nanotechnology Tools
Chemical and Materials Research Equipment
BioScience Tools
Semiconductor Equipment
Medical Materials imaging and Assessment

Letter to shareholders



I believe we will look back upon 2004 as the year JMAR began to appreciate the full significance and market potential of its core technology and competencies and began to build a strong platform for long-term sustainable growth.



In 2004, we identified serious risks associated with our continued reliance on government funded X-ray lithography R&D. While we successfully met the goals of our DARPA program early in the year, DARPA was shifting its technology focus, making continued funding questionable. Looking beyond our R&D contracts, long-term revenue growth remained dependent on sales of X-ray stepper systems to a moribund segment of the semiconductor industry.

Our response has been bold and proactive. Over the past year, we systematically and opportunistically expanded our pipeline to include multiple new products targeting several, high-growth markets – translating concepts to concrete products under development. To focus on strengthening our business and realizing growth opportunities, we established three fundamental company-wide goals in 2004:

- **Balance** the customer base by adding commercial customers to the existing government base
- **Diversify** our business scope to include multiple products in multiple market verticals
- **Expand** revenue base to \$100 million within five years

Believing JMAR's unique position in X-ray light source technology could be the basis for high value products outside of lithography, we reassigned staff to create an advanced concepts team. Their mission was to develop new product ideas and test their prospects as revenue and earnings generators into the future. To survive, a product concept was required to answer four key

JMAR plans to manufacture the first Compact X-Ray Microscope for 3D imaging of single cells and polymers to 20 nm resolution in the scientist's own laboratory.

questions in the affirmative:

- Does the product uniquely and cost-effectively address an acknowledged need in a growing industry or growing segment of a mature industry?
- Will the addressable market exceed \$100 million in five years?
- Does JMAR have a basis for strong, sustainable competitive advantage?
- Does JMAR have the resources to carry out product development and get to market in less than two years?

From the onset, we knew that these goals presented an ambitious challenge and that near-term pain would be the price for the long-term gains we sought. But in 2004, three potential home runs emerged from this process: the Compact X-Ray Microscope, the X-Ray Nano Probe and the BioSentry.

Our next hurdle was to enable and implement a growth strategy to identify, recruit and leverage internal and external resources necessary to put this

plan into action within the aggressive timeframe we established. Internally, we marshaled our existing expertise in diode pumped, solid-state lasers and Soft X-ray light sources – the product of a 10-year R&D history – and channeled it into the development of Compact X-ray Microscope (XRM) and X-ray Nano Probe (XNP) products. The result is a product pipeline designed to pursue virtually limitless new opportunities in nanotechnology, bioscience, chemical research, and defense.



At the same time, we realized the value of external alliances and agreements that would leverage our infrastructure while speeding the time to market for new product offerings. JMAR's BioSentry product line is a direct result of this external growth strategy that dove-tails with our longer duration internal product development projects. Through partnerships and licensing deals, we were able to combine our core competency in photonics with know-how, IP, and technical

Key Achievements

In 2004 JMAR made substantial progress toward implementing our broadened strategy:

In 12 short months, we designed, built, tested, and have now fielded JMAR's first product destined for large-scale production – the BioSentry. In Q2 2005 we expect to install pre-production systems in at least one water utility, beverage bottler, water bottler, and cruise ship. We are setting up a BioSentry production line in our Vermont facility for a Q3 2005 production ramp up.

In Q2 2004 we first developed the concept for a versatile family of X-ray based tools capable of chemical analysis and material interaction at the nano-scale. Over the past 10 months, we have designed and built each of the subsystems for a family of nanotechnology instruments we refer to as X-ray Nano Probe. Today we are characterizing and integrating these subsystems in preparation for proof of concept testing this summer.

Also in Q2 2004, we first developed the concept for a Compact X-ray Microscope. Over the past 10 months, we have developed a light source capable of producing X-rays that pass easily through water but are absorbed by organic material. This summer, we plan to produce 2D and 3D images of single cells as proof of concept and applicability to bioscience research.

We also continued NAVAIR funded X-ray lithography research and development that will lead to the laboratory use of Collimated Plasma Lithography (CPL) for special applications, including production of critical X-ray optics, such as the zone plates used in all of our X-ray based products. Our plan is to use CPL as part of our X-ray instrument production process.

We maintained a steady pace of activity in our Microelectronics Division, as it continued to support General Dynamics and the Defense Microelectronics Activity. We expect this part of the business to continue to contribute at its current level going forward.

We also successfully secured \$13.5 million additional financing to assist in the growth of the Company.

support from The LXT Group, NASA, and PointSource Technologies to develop operational pre-production units in less than 12 months.

We have now showcased BioSentry at several major conferences – directly addressing key industry players, broadening our relationships and creating opportunities for multiple business development and value-driving initiatives as this product goes to market.

JMAR's BioSentry product line is a direct result of our external growth strategy.

Through alliances and licensing agreements we were able to combine our core competency in photonics with know-how, IP, and technical support from The LXT Group, NASA, and PointSource Technologies to develop operational pre-production units in less than 12 months.

These achievements in new product development were matched by our corporate and business development efforts in 2004.

To enable successful transition to commercialization, we added key staff to cover commercial marketing, sales, distribution, and production of standard products. Tracking the rapid pace of

BioSentry development, we also established a flexible manufacturing team and facility in our Vermont operation for commercial ramp up in the second half of this year.

Critical to the success of our aggressive new product development program was our success in raising \$9.5 million in additional capital. These financings, combined with our commitment to managing our financial resources, enabled us to end the year with \$6.6 million in cash, not including the \$4 million raised in the February 2005 financing, an untapped \$3 million working capital line, and virtually no debt. We anticipate our existing liquidity will enable us to reach full commercial launch of BioSentry and reach Alpha levels for our Compact X-ray Microscope and X-ray Nano Probe - leaving us well-positioned to capitalize on the market potential of each of these exciting product lines.

For JMAR, 2004 signified nothing less than the beginning of a major transformation in our Company's vision, goals, strategy, and ability to successfully execute its plans. I am

proud to look back on our accomplishments in 2004 and excited to see new growth on the horizon for 2005, as we continue our transition to commercialization. I am confident that our strategic focus, enabling technologies, new products and strong core team will ensure broad market acceptance, growth and commercial success for JMAR, successfully driving future shareholder value.

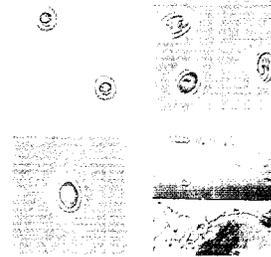


Ronald A. Walrod
Chief Executive Officer and President

JMAR PRODUCTS PIPELINE UPDATE

BioSentry:

BioSentry provides unique real-time, continuous, online, surveillance of water, making it an ideal early warning system with applications across multiple industries, including utility water, beverage and bottled water production, building and critical asset security, process water for semiconductors and drugs, medical facilities, cruise ships and aircraft.

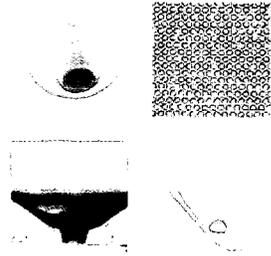


Cryptosporidium parvum and Giardia lamblia; detectable by BioSentry; water utility test site.

X-ray Nano Probe:

The X-Ray Nano Probe, actually a family of nanotechnology tools, is enabled by JMAR's ability to create and focus soft X-rays down to a spot size measured in 10's of nanometers. This intensely focused X-ray beam creates a nano-plasma in materials of interest that can be used to analyze the chemical structure of materials, or to fabricate materials, all at the nano-scale.

We know of no other tool capable of performing these functions. This tool, capable of 20 nm resolution, may prove critical to in-lab research, process development, and quality control for nano-materials.

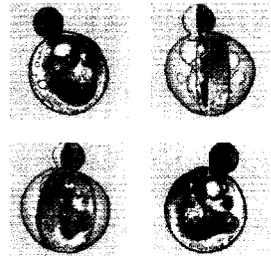


Nano Probe tools can be used for erosion and deposition onto samples at nano spatial scales.

Compact X-ray Microscope:

JMAR plans to manufacture the first Compact X-Ray Microscope suitable for 3D imaging of single cells and polymers to 20 nm resolution in the scientist's own laboratory. We have adapted our CPL X-ray generator, the size of a large conference room table, to produce X-rays in the "water window" as an alternative to the synchrotron.

We see this innovation as the catalyst for rapid growth in X-ray microscopy in the bioscience and chemical industries by enabling convenient, immediate access to this powerful research tool.



3D images of a *Saccharomyces cerevisiae* yeast cell from research conducted on an imaging X-ray microscope at the Advanced Light Source at the Lawrence Berkeley National Laboratory by Carolyn Larabell and Mark Le Gros.

The following is an excerpt from the Company's 2004 Form 10-K Annual Report filed by the Company with the Securities and Exchange Commission on March 31, 2005. It excludes the cover pages (pages 1 and 2), certain parts of the Business Section (pages 7 to 14), quantitative and qualitative disclosures about market risk (page 30), Part III (pages 31 and 32) and Part IV (page 32).

The Company's entire Form 10-K Annual Report (including the above pages) is available to shareholders at no charge and copies of any of the exhibits of the Form 10-K may be obtained at a charge of \$2.00 per exhibit to cover handling and mailing charges. Written requests should be sent to Investor Relations at the Company's Corporate office located at 5800 Armada Drive, Carlsbad, CA 92008.

JMAR Technologies, Inc. (JMAR or Company) is a leading innovator in the development of laser-based equipment for imaging, analysis and fabrication at the nano-scale. The Company is leveraging over a decade of laser and photonics research to develop a diverse portfolio of products with commercial applications in rapidly growing industries while continuing to carry out research and development for the U.S. Defense Advanced Research Projects Agency (DARPA) and support for the U.S. Government's Defense Microelectronics Activity (DMEA) semiconductor fabrication facility. JMAR is targeting the nanotechnology, bioscience and semiconductor industries with its Britelight™ Laser; X-ray Light Source; Compact X-ray Microscope — for 3D visualization of single cells and polymers; and its X-ray Nano Probe — enabling interaction, analysis and materials modification at the nano-scale. JMAR also develops, manufactures and markets its BioSentry™ microorganism early warning system and maintains a strategic alliance for the production of the READ chemical sensor for homeland security, environmental and utility infrastructure industries.

During 2004, JMAR implemented its new business strategy to balance, diversify and expand its revenue base through new product development and technology acquisition. We are now complementing our progress in product development and market validation with preparation for manufacturing and distribution.

Business Segments

JMAR conducts its operations in the following four business segments:

Research Division (formerly JMAR Research) – Located in San Diego, California, this segment carries out contract research and development involving JMAR's patented high brightness, short-pulse, diode pumped solid state lasers (Britelight™) and laser-produced plasma (LPP) technology. A major portion of the Research Division's R&D has been funded by contracts from DARPA of the U.S. Department of Defense. This segment's historic focus on X-ray lithography light source R&D and equipment development was expanded in 2004 when it embarked on an effort to identify additional uses for its laser and LPP technologies. As a result of this business expansion investigation, this segment is developing several soft X-ray enabled products including a Compact X-ray Microscope and a family of instruments for nanotechnology applications. JMAR believes that this instrument family will provide the ability to carry out chemical analysis, chemical vapor deposition, and machining at resolutions down to 20 nm. During 2004, this segment accounted for approximately 35% of the Company's revenues.

New products are developed at the Research Division based on contract and internally funded R&D and then transitioned to JMAR's Vermont Operations for product engineering and production.

Vermont Operations (formerly JSAL) – Located in South Burlington, Vermont, this segment carries out contract research and development involving nanolithography and serves as JMAR's manufacturing arm, carrying out the manufacturing engineering, production, integration and test of JMAR's new products. The Vermont Operations also applies its program management, engineering and manufacturing expertise to the contract development and production of new products using the customer's technology. As an example, the Vermont Operations is the design and manufacturing contractor for FemtoTrace, Inc. building the READ trace chemical sensors for real time detection of extremely small quantities of organics. The READ equipment has uses in environmental contamination detection and homeland security applications. The Vermont Operations will also introduce a novel Optical Angular Scanning Imaging System (OASIS) for biological, medical and materials research applications in 2005. OASIS is a versatile, rapid scanning optical microscope that combines high magnification, fine optical resolution, and rapid scanning motion control. This segment also performs funded contract research and development for DARPA. During 2004, this segment accounted for approximately 28% of the Company's revenues.

Microelectronics Division (formerly JMAR Semiconductor) – This segment provides process integration and maintenance support for the Defense Microelectronics Activity's semiconductor fabrication facility in McClellan, California. It also designs and produces application specific integrated circuits (ASICs) for military and commercial markets and is developing application specific standard products. During 2004, this segment accounted for approximately 37% of the Company's revenues.

Sensor Products Group – This segment's first product is the BioSentry™ sensor, a laser-based early-warning system that provides continuous, real-time surveillance, detection and classification of waterborne microorganisms. Prospective applications include beverage bottling quality assurance, water utility operations, cruise ship water monitoring and homeland security for building water supply and water distribution systems. During 2004, there were no revenues from this segment. Revenues are expected in 2005.

Products and Services

JMAR's products and services evolve from one or more of its five core competencies: high brightness solid state lasers, laser produced plasma generators for soft X-ray light, automated precision positioning and alignment systems, microelectronic fabrication operations, and multi-angle light scattering for particle classification. These competencies form the basis for JMAR's contract research and development, standard and custom products, and support services revenues.

Britelight™ Lasers

JMAR's patented diode pumped solid state (DPSS) Britelight™ lasers feature high brightness, high beam quality and sub-nanosecond rise time. High brightness DPSS lasers are well suited to a wide variety of applications including plasma production; micromachining and welding; analytical instruments for biotechnology and chemistry; laser identification, detection, and ranging (LIDAR); laser crystal conditioning; and missile defense. High brightness DPSS ND:YAG lasers may be operated at their fundamental wavelength of 1064 nm or at harmonic multiples (532 nm or 355 nm) of the fundamental, depending on the application.

Compact Soft X-ray Sources

JMAR's LPP X-ray Source is a compact alternative to a large synchrotron facility for certain soft X-ray applications, including X-ray microscopy, X-ray nano probes and X-ray lithography. JMAR's LPP X-ray Source consists of a laser driver and a soft X-ray generator. The laser may be any one of several configurations of JMAR's Britelight lasers. The generator manages the target material upon which the laser light impinges to create a plasma point source of short wavelength (1-4 nanometer) light. The generator also collects and manages the plasma produced X-rays and controls the debris generated by the plasma.

Compact X-ray Microscope

During 2004, JMAR started developing X-ray microscope (XRM) technology based on the Company's LPP X-ray source. This development is aimed at new products enabling two dimensional (2D) imaging and three dimensional (3D) visualization of hydrated single cells and polymers at sub-50 nanometer resolution using X-ray tomography. At radiation wavelengths between 2-4 nm, most biological systems produce inherent absorption contrast due to the difference in absorption between carbon and oxygen.

Several XRM systems exist on synchrotron beam lines around the world and are used for imaging biological and other specimens. JMAR's innovation is to replace the synchrotron with a compact X-ray source, making the tool available to a large number of biological or cellular research laboratories, thereby accelerating research. The microscope, though simple in principle, is challenging in practice due to the extremely small features being imaged. Zone plate optics are used to collect and focus the soft X-ray light and an X-ray sensitive CCD camera is used as a detector.

Key product development milestones for the XRM include LPP target optimization, design of the X-ray generator, and fabrication of the zone plate condenser optics. JMAR has established a scientific advisory board (SAB) to provide guidance on the design, development and application of the Company's XRM. We expect that the contributions from the SAB members during XRM development will ensure that we address industry needs while continuing to meet our production milestones. We plan to conduct first demonstrations of XRM performance during 2005. JMAR has established the basis for an alliance with a federally funded national research center to facilitate a joint technical exchange and to prepare for initial operation characterization and demonstration of the Alpha Model of its X-ray microscope in early 2006.

Compact X-ray Nano Probe

During 2004, we began development of our X-ray Nano Probe (XNP) instrument product line for materials analysis, machining, and deposition to 20 nanometer resolution. This instrument line uses the same X-ray source as the XRM. We believe that the XNP will have broad application across a number of industries including nanotechnology, chemical, and materials.

The XNP system takes advantage of the high peak power and excellent beam quality produced by our Britelight laser. LPP generated X-rays are produced in very short pulses and can be focused using zone plates to produce nano-scale spot sizes on the target. The small spot size, in combination with high peak power, produces power densities in excess of those required to form a nano-plasma. Optical radiation emitted from the nano-plasma can be used in the spectroscopic identification of materials on a 20-50 nm spatial scale. Alternatively, ions produced in the plasma can enable nano-scale materials analysis using time of flight mass

spectroscopy. We believe that the XNP system can also be used for erosion and for deposition onto samples at nano spatial scales. We expect to conduct first demonstrations of XNP performance in 2005.

Collimated Plasma Lithography (CPL)

The semiconductor industry currently uses deep ultraviolet (DUV) lithography in its chip manufacturing process. X-ray lithography has three important attributes that differentiate it from DUV lithography: shorter wavelength (~1 nm vs. ~193 nm), larger depth of field (~2,000 nm vs. ~150 nm), and the ability to penetrate thick resist without high absorption. These attributes make X-ray lithography particularly well suited for printing fine features on wafers lacking smooth topology (e.g., compound semiconductor wafers, such as GaAs), and for printing very deep, high aspect features (e.g., C-RAM circuits). To distinguish its X-ray lithography technology from that which uses a synchrotron, JMAR calls its technology collimated plasma lithography (CPL). Manufacturers of compound semiconductors currently use electron beam tools to produce high aspect features. JMAR believes its CPL technology can achieve throughput five to ten times greater than that possible using electron-beam lithography.

In 2004, JMAR demonstrated the operation of CPL using its LPP X-ray source and X-ray stepper in a series of “iron man” tests. Nevertheless, it became clear that CPL faced a daunting set of challenges and risks involving the technology, product design, manufacturing cost, infrastructure readiness, industry momentum, financing, and competition from substitute lithography technologies. If GaAs chip producers dramatically increase IC production in the future, X-ray lithography may present a significant business opportunity for JMAR. Although the anticipated large demand for X-ray lithography for GaAs semiconductor fabrication has not yet materialized, we have found other, more immediate, applications for our laser and X-ray technology, namely the XRM and XNP products discussed above. In addition, the Company’s lithography expertise is being used to develop a zone plate manufacturing capability for its XRM and XNP products.

BioSentry™

JMAR’s BioSentry™ product is an early-warning system that provides continuous, real-time surveillance, detection and classification of waterborne microorganisms. In early 2004, JMAR formed an alliance with The LXT Group to develop the BioSentry technology. In February 2005, the Company entered into an exclusive license with The LXT Group covering certain intellectual property related to the BioSentry system. In late 2004 and early 2005, JMAR also entered into exclusive license agreements with the National Aeronautics and Space Administration and with PointSource Technologies, LLC to secure and enhance additional related technology.

JMAR is currently testing and evaluating BioSentry beta units and assembling the marketing, production, system installation, and customer support teams needed for product launch. We received a high level of interest at the BevExpo trade show in late September 2004 from prospective buyers in some of our target markets and we installed our first Beta test units shortly before the end of the first quarter of 2005. In early March 2005, we entered into a Technology Testing and Contingent Purchase Agreement with Olivenhain Municipal Water District (OMWD) for the installation and testing of three Beta units of the BioSentry system at OMWD’s water treatment plant in San Diego County. If the BioSentry units satisfy certain test criteria during a six month test period, including approval by the California Department of Health Services, OMWD has agreed to purchase three BioSentry production units. The Company is also actively negotiating agreements for Beta installations with potential customers in other key markets including homeland security, water bottlers, cruise ships, and beverage production.

Microelectronics Process Integration – Services and Fabless Production

JMAR provides technology development and high-value technology services to a government semiconductor producer. This business is based on a contract originally awarded to the Company by General Dynamics Advanced Information Systems (GDAIS) in 1998. Work under this contract includes the development, construction, and operation of a semiconductor wafer fabrication facility in McClellan, California for the Defense Microelectronics Activity (DMEA).

Under this ongoing program, JMAR applies its in-depth semiconductor industry experience and relationships to define and acquire the technologies and semiconductor equipment needed to support its customer’s mission. In a unique arrangement, JMAR maintains access to use DMEA facilities to support ASIC commercial design and wafer fabrication. In 2003, JMAR expanded its relationship with the DMEA by entering into a five-year cooperative research and development agreement (CRADA). This CRADA establishes a joint DMEA/JMAR research laboratory environment to strengthen and enhance DMEA’s ability to use new processes, equipment, and designs to improve low volume foundry efficiency. By virtue of this CRADA, JMAR intends to use the versatile facilities and

capabilities available at the DMEA's foundry to develop and produce commercial products for the government and commercial sectors.

READ Sensor Systems

Under an agreement with FemtoTrace, Inc. (a company formed to commercialize technology licensed from the Jet Propulsion Laboratory (JPL)), JMAR's Vermont Operations is engaged in the design and manufacture of alpha and beta sensor systems that will be used in certain environmental applications and that have potential to meet urgent homeland security needs. This sensor system uses a mass spectrometer-based technology named reversal electron attachment detection (READ) developed by FemtoTrace. If the READ product meets technical and sales objectives, JMAR expects to enter into an agreement with FemtoTrace to provide for the exclusive manufacture of production units of this highly sensitive, real-time organic chemical detection system at JMAR's Vermont facility.

OASIS

Developed by JMAR's Vermont Operations to address a market need for a versatile, rapid scanning optical microscope, OASIS beta systems will be field tested in the second quarter of 2005 at the University of Vermont Microscopy Center. By combining high magnification, fine optical resolution, and rapid scanning software, OASIS offers an affordable screening system for bioscience applications in pathology, hematology, histology, parasitology, and mycology. Other potential markets include forensic science, materials inspection and academic research.

SECURITIES INFORMATION

The Company's common stock is traded on the Nasdaq SmallCap Market under the symbol JMAR. The 2004 and 2003 high and low transaction prices for the common stock as reported by NASDAQ are set forth in the following table.

Common Stock Price

	<u>High</u>	<u>Low</u>
2004		
First Quarter	4.72	1.96
Second Quarter	3.70	1.75
Third Quarter	2.14	1.03
Fourth Quarter	2.13	1.27
2003		
First Quarter	1.25	0.76
Second Quarter	1.49	0.82
Third Quarter	2.55	1.10
Fourth Quarter	2.51	1.31

As of March 7, 2005, there were approximately 10,400 holders of JMAR's common stock.

The Company has never paid cash dividends on its common stock. The Company currently intends to retain earnings for use in the operation and expansion of its business and therefore does not anticipate paying any cash dividends in the foreseeable future. The payment of dividends in the future by the Company on its common stock will be dependent on its earnings and financial condition and such other factors considered relevant by the Company's Board of Directors.

Consolidated Statements of Operations Data – For the Years Ended December 31,

	2004	2003	2002	2001	2000
Revenues	\$ 10,059,839	\$ 17,296,508	\$ 18,383,810	\$ 12,903,811	\$ 9,114,357
Gross profit	1,998,740	3,964,627	3,413,492	3,499,243	2,328,406
Operating expenses	6,752,545	5,383,251	6,523,346	4,989,402	3,222,903
Loss from operations	(4,753,805)	(1,418,624)	(3,109,854)	(1,490,159)	(894,497)
Realized gain on sale of marketable securities	—	—	1,349,721	1,189,273	2,184,476
Interest and other income	158,144	63,225	67,404	252,282	273,626
Interest and other expense	(821,586)	(731,315)	(284,174)	(107,950)	(106,466)
Income (loss) from continuing operations before income taxes	(5,417,247)	(2,086,714)	(1,976,903)	(156,554)	1,457,139
Income tax expense	—	—	(484,423)	—	—
Income (loss) from continuing operations	(5,417,247)	(2,086,714)	(2,461,326)	(156,554)	1,457,139
Loss from operations of discontinued operations	(214,893)	(1,396,749)	(5,839,367)	(14,544,980)	(2,681,904)
Gain (loss) on disposal of discontinued operations	—	205,000	(3,200,000)	—	—
Net loss	(5,632,140)	(3,278,463)	(11,500,693)	(14,701,534)	(1,224,765)
Preferred stock dividends	(2,247,876)	(942,903)	—	—	—
Loss applicable to common stock	(7,880,016)	(4,221,366)	(11,500,693)	(14,701,534)	(1,224,765)
Basic income (loss) per share:					
Income (loss) per share from continuing operations	\$ (0.25)	\$ (0.12)	\$ (0.11)	\$ (0.01)	\$ 0.06
Loss per share from discontinued operations	(0.01)	(0.04)	(0.38)	(0.64)	(0.12)
Loss per share applicable to common stock	\$ (0.26)	\$ (0.16)	\$ (0.49)	\$ (0.65)	\$ (0.06)
Basic shares used in computation of income (loss) per share	<u>30,758,689</u>	<u>25,618,296</u>	<u>23,618,169</u>	<u>22,484,905</u>	<u>21,468,763</u>

Consolidated Balance Sheet Data – December 31,

	2004	2003	2002	2001	2000
Working capital (deficit)	\$ 7,180,382	\$ 2,427,166	\$ (780,117)	\$ 7,843,465	\$ 21,543,381
Total assets	17,426,098	13,493,183	15,121,660	26,618,625	34,191,574
Short-term debt	145,019	2,395,445	1,556,405	3,007,152	1,291,178
Long-term liabilities	465,492	449,873	1,708,804	1,419,632	339,908
Redeemable preferred stock	8,087,274	2,217,150	—	—	—
Stockholders' equity	<u>5,101,925</u>	<u>5,277,800</u>	<u>3,677,994</u>	<u>14,299,655</u>	<u>28,444,669</u>

MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

Overview

JMAR Technologies, Inc. is a leading innovator in the development of laser-based equipment for imaging, analysis and fabrication at the nano-scale. The Company is leveraging over a decade of laser and photonics research to develop a diverse portfolio of products with commercial applications in rapidly growing industries while continuing to carry out research and development for the U.S. Defense Advanced Research Projects Agency (DARPA) and support for the U.S. Government's Defense Microelectronics Activity (DMEA) semiconductor fabrication facility. JMAR is targeting the nanotechnology, bioscience and semiconductor industries with its Britelight™ Laser; X-ray Light Source; Compact X-ray Microscope — for 3D visualization of single cells and polymers; and its X-ray Nano Probe — enabling interaction, analysis and materials modification at the nano-scale. JMAR also develops, manufactures and markets its BioSentry™ microorganism early warning system and maintains a strategic alliance for the production of the READ chemical sensor for homeland security, environmental and utility infrastructure industries.

Sources of Revenue

Currently, over 92 percent of the Company's revenues are derived as the prime contractor or subcontractor for government contracts. These contracts have generated intellectual property owned by the Company (with limited residual rights held by the government) in areas in which the Company believes there are significant commercial applications.

The most significant ongoing contract has been the contract issued to JMAR's Research Division by the U.S. Army Research Laboratory sponsored by DARPA for further development of the Company's CPL system (DARPA Contract). A total of \$23.7 million has been funded under this contract, including \$3.5 million funded in February 2005. No program funding related to the DARPA Contract is included in the United States Government's fiscal year 2005 budget and the Company expects no further funding under this contract.

JMAR's next most significant contract is a \$10 million contract issued to JMAR's Vermont Operations by Naval Air Warfare Center AD to procure sub-100 nm feature size X-ray masks used in the development and production of high performance GaAs

MMICs, and to produce zone plate optics (NAVAIR Contract). Through December 31, 2004, a total of \$8.8 million has been received under this contract. The Company expects to receive the remaining funding of the Navair Contract and a new contract to further the work in 2005.

The third major ongoing revenue source involves the subcontract between JMAR's Microelectronics Division and General Dynamics Advanced Information Systems (GDAIS) to enhance and maintain the semiconductor wafer fabrication processes installed at the McClellan Air Force Base in Sacramento for the DMEA (GDAIS Contract). This work, which started in 1998, has resulted in a new subcontract each year out of funds available in the DMEA's budget as an element of the Department of Defense's Advanced Technology Support Program. The Company received \$5 million and \$3.5 million in contracts in 2003 and 2004, respectively, for this program and expects further funding in 2005.

Unrelated to JMAR's Britelight and X-ray source technology, we are preparing to enter the drinking water, food and beverage and homeland security markets with our new BioSentry™ sensor product. The BioSentry™ sensor provides continuous monitoring of drinking water for microorganisms. This product has successfully passed proof of concept testing and we have assembled Beta units for installation at various Beta sites in the first and second quarters of 2005. In early March 2005, we entered into a Technology Testing and Contingent Purchase Agreement with Olivenhain Municipal Water District (OMWD) which provides for the installation and testing of three Beta models of the BioSentry sensor at OMWD's water treatment plant in San Diego County. If the BioSentry Beta units satisfy certain test criteria during a six month test period, including approval by the state regulator, OMWD has agreed to purchase three production units. We installed the first Beta test units at OMWD shortly before the end of the first quarter of 2005.

Through our collaboration with FemtoTrace, Inc., we are also involved in the market for chemical sensors. JMAR has designed, manufactured, and integrated two Alpha versions of the READ sensor, a highly sensitive chemical detection system under contract for FemtoTrace. JMAR expects to manufacture a number of Beta units for FemtoTrace in 2005 and is discussing the terms of an agreement to act as contract manufacturer for the production units of FemtoTrace's READ sensor product line.

Opportunities, Challenges and Risks

In 2004, we conducted several "iron man" tests of the Beta version of our X-ray lithography light source and stepper system to demonstrate the performance of our CPL technology in an effort to convince the semiconductor industry of the value of CPL technology for semiconductor fabrication. While we believe that JMAR's CPL technology may show its value to the Gallium Arsenide semiconductor industry in the future, JMAR faces a number of challenges and risks involving the CPL technology, product design, manufacturing cost, infrastructure readiness, industry momentum, financing, and competition from substitute lithography technologies. The continuation of this work is dependent on continued funding by our DARPA contract, as well as financing and other support provided by one or more strategic partners. No program funding related to CPL was included in the United States Government's fiscal year 2005 budget, and the Company expects no further government funding for this work. To date, JMAR has been unable to find any strategic partners to support commercialization of its CPL technology.

With the future prospects of its CPL product development program uncertain and with the benefit of a substantial investment in intellectual property related to soft X-ray generation, in 2004 JMAR implemented a new strategy to balance, diversify and expand its revenue base through new product development and technology acquisition. We are now complementing our progress in product development and market validation with preparation for manufacturing and distribution. In pursuit of this new strategy, JMAR has identified other, more immediate, commercial opportunities for our laser and X-ray technology, namely Compact X-ray Microscope and X-ray Nano Probe products. JMAR has also acquired new technology in multi-angle light scattering and is developing BioSentry products we can deliver in 2005 to several high growth-rate industries. JMAR intends to continue to pursue government funding in areas that create valuable technology to support its new product development efforts. The XRM, XNP and BioSentry development activities are described in more detail in "Business—Products and Services" above.

As JMAR seeks to add commercial revenues to our predominately government contract revenue base, we face a series of challenges, including technical and market risks and uncertainties associated with the development of new technologies and new products. Our product development efforts will require substantial continued investment by JMAR and we expect to face challenges in transitioning each of our new products from the proof of concept, alpha and beta stages to commercial introduction and market acceptance. See "Factors That May Affect Future Results" below for more information on the risks and uncertainties faced by JMAR.

Results of Operations

Year Ended December 31, 2004 Compared to Year Ended December 31, 2003

Revenues. Total revenues for the years ended December 31, 2004 and 2003 were \$10,059,839 and \$17,296,508, respectively, the majority of which were contract revenues. Revenues by segment for 2004 and 2003 were as follows:

	<u>2004</u>	<u>2003</u>
Research Division	\$ 3,575,633	\$ 6,206,123
Vermont Operations	2,785,929	6,561,372
Microelectronics Division	3,698,277	4,529,013
Sensor Products Group	<u>—</u>	<u>—</u>
	<u>\$ 10,059,839</u>	<u>\$ 17,296,508</u>

The decrease in revenues for the year ended December 31, 2004 compared to the year ended December 31, 2003 was primarily attributable to a decrease of \$2,166,775 in the NAVAIR Contract revenues at the Vermont Operations due to the delay in receipt of funding on that contract, a decrease of \$3,608,489 in revenues of the Research Division and Vermont Operations related to the DARPA Contract, a decrease of \$1,027,533 related to two contracts at the Vermont Operations that have been completed and a decrease of \$619,994 in contract revenues at the Microelectronics Division related to reduced equipment installations under the GDAIS Contract in 2004. The lower revenues for the DARPA contract in 2004 is primarily related to lower funding in 2004 and 2003 compared to 2002, resulting in a lower DARPA Contract backlog entering 2004 compared to fiscal year 2003, exacerbated by the fact that no additional program funding related to the DARPA Contract was included in the U.S. Government fiscal year 2005 budget and no further funding under this contract is expected beyond the funds received in February 2005. Revenues for the three months ended December 31, 2004 and 2003 were \$1,755,289 and \$3,570,210, respectively. Despite the lower revenues for the three months ended December 31, 2004 compared to the corresponding period in 2003, receivables at December 31, 2004 were \$3,090,922 compared to \$2,802,025 at December 31, 2003. The higher than expected receivables at December 31, 2004 is due to 1) the continued delay in receipt of funding for the DARPA Contract (\$3.5 million was received in February 2005); 2) the timing of billings for the NAVAIR Contract in 2004 compared to 2003 and because of advanced billings allowed under the NAVAIR Contract in 2004 (resulting in billings in excess of costs incurred at December 31, 2004); and 3) the timing of billings at the Microelectronics Division. Because of the receipt of the \$3.5 million of DARPA funding in February 2005, the Company expects the higher than normal accounts receivable in relation to revenues to normalize starting in the quarter ended June 30, 2005. The Company will continue to experience flat revenues for 2005 until sales from our new products are realized.

Losses. The net loss for the years ended December 31, 2004 and 2003 was \$(5,632,140) and \$(3,278,463), respectively. The loss from continuing operations for those same periods was \$(5,417,247) and \$(2,086,714), respectively, while the loss from operations for those same periods was \$(4,753,805) and \$(1,418,624), respectively. Included in the net loss for the years ended December 31, 2004 and 2003 is a loss from discontinued operations of \$214,893 and \$1,191,749, respectively. Included in the net loss and loss from operations for the years ended December 31, 2004 and 2003 are costs associated with product development (see further discussion below) of \$1,722,329 and \$529,039, respectively, and asset write-downs of \$191,575 and \$346,060, respectively. Included in the net loss and loss from continuing operations for the years ended December 31, 2004 and 2003 is a non-cash interest charge of \$442,029 and \$289,063, respectively (see "Interest and Other Expenses" below).

Gross Margins. Gross margins for the fiscal years ended December 31, 2004 and 2003 were 19.9% and 22.9%, respectively. The Company's margins are low because the majority of its revenues are from contract revenues, which inherently generate lower margins than product revenues. The primary decrease in the gross margin for the year ended December 31, 2004 compared to the prior year is due to a contract reserve of \$316,000 for the year ended December 31, 2004 related to a contract at the Vermont Operations and inventory reserves of approximately \$168,000 for the year ended December 31, 2004, also at the Vermont Operations. These reductions were offset in part by lower revenues in 2004 on the lower margin NAVAIR Contract (i.e., the lower margin NAVAIR Contract represented a greater percentage of revenues in 2003). The low margins on the NAVAIR Contract were due to the high subcontract component of that contract and the Company's absorption of some of the costs incurred due to limited funding on that contract. The majority of the Company's revenues for 2005 will be derived from contracts, so gross margins are expected to continue at similar levels increased somewhat by higher gross margins expected later in 2005 from sales of BioSentry products. The Company is investing in new product development activities that it believes will lead to higher margin products in the future.

Selling, General and Administrative (SG&A). SG&A expenses for the fiscal years ended December 31, 2004 and 2003 were \$4,838,641 and \$4,508,152, respectively. The increase in SG&A expenses for 2004 was primarily attributable to 1) SG&A costs of the

Sensor Products Group formed in 2004 of \$415,708; 2) higher accounting and insurance costs of \$219,332; and 3) higher payroll related costs of \$269,159. These increases were offset in part by a reduction in SG&A costs of the Vermont Operations due to staff and other cost reductions of \$598,585.

Research, Development and Engineering Program (RD&E). The Company's RD&E consists of two types: customer-funded RD&E (U.S. government and other companies) and company-funded RD&E. Both types of RD&E costs are expensed when incurred.

- Customer-funded RD&E costs incurred, primarily related to the DARPA Contract and the NAVAIR Contract, are included in "Costs of Revenues" and totaled \$3,993,862 and \$9,606,745 for the fiscal years ended December 31, 2004 and 2003, respectively. The decrease in customer-funded RD&E expenditures for 2004 consists of a decrease of \$2,502,495 related to the NAVAIR Contract, a decrease of \$2,398,252 related to the DARPA Contract and decreases in two contracts completed in 2004 at the Vermont Operations of \$712,136.
- Company-funded RD&E costs associated with product development are shown in "Operating Expenses" and totaled \$1,722,329 and \$529,039 for the fiscal years ended December 31, 2004 and 2003, respectively. The increase in 2004 is due to product development started in 2004 for our BioSentry, XRM and XNP new products.

Total RD&E expenditures for 2004 and 2003 were \$5,716,191 and \$10,135,784, respectively. Total RD&E expenditures as a percentage of revenues were 56.8% and 58.6% for the years ended December 31, 2004 and 2003, respectively. The RD&E expenditures as a percentage of revenues have been historically higher than that for a commercially oriented company because much of the Company's revenues has been R&D contract revenues.

During 2004, JMAR has been implementing its strategy to balance, diversify and expand its revenue base through new product development and to acquire or license products, technologies or businesses. Specifically, during the second quarter of 2004 the Company started product development on the BioSentry product line, and during the third quarter of 2004, the Company initiated the product development of the X-ray Microscope and X-ray Nano Probe product lines. Accordingly, the Company expects company-funded RD&E to increase significantly for 2005.

Discontinued Operations. The loss from discontinued operations of \$214,893 for the year ended December 31, 2004 is related to the standard semiconductor products business, primarily associated with the lease of the Irvine facility. The loss from discontinued operations of \$1,396,749 for the year ended December 31, 2003 includes \$457,413 related to the standard semiconductor products business, primarily associated with the lease of the Irvine facility and legal costs for disputed liabilities of that business offset in part by gains from settlement of certain liabilities. In addition, for 2003, the loss from discontinued operations includes \$939,336 related to JMAR Precision Systems, Inc. (JPSI). In July 2003, the Company sold JPSI to several private investors. The results of operations of JPSI for 2003 through the sale date are reported in discontinued operations in 2003. The decrease in the loss from discontinued operations is due to the sale of JPSI in July 2003. The gain on disposal of discontinued operations of \$205,000 for the year ended December 31, 2003 relates to the sale of JPSI.

Prior to December 31, 2001, as the level of business expected from its standard semiconductor products business did not materialize, the Company decided to take action to sublease its Irvine facility and move the standard semiconductor products business into a smaller facility and recorded a reserve against the Irvine facility lease. The lease provides for rent and related expenses of approximately \$36,000 per month through August 2005. In June 2004, the Company subleased the facility, however, the sub-tenant defaulted on the sublease in January 2005 and the facility is currently unoccupied. The Company expects that facility to remain unoccupied until the lease expires in August, 2005.

Interest and Other Expense. Interest and other expense for the year ended December 31, 2004 and 2003 was \$821,586 and \$731,315. Interest and other expense is higher for 2004 versus 2003 primarily due to the financing transactions the Company entered into in late March 2003 and January 2004 (see "Consolidated Liquidity and Financial Condition" below). Included in interest expense for the years ended December 31, 2004 and 2003 is \$442,029 and \$289,063, respectively, related to the beneficial conversion feature and fair value of warrants issued in connection with the Working Capital Line described below. These amounts were charged to expense using the effective yield method over the period from the issuance date to the earlier of the maturity date of the debt or the conversion dates. Interest expense for the years ended December 31, 2004 and 2003 also includes \$180,126 and \$171,358, respectively, related to the discounted liability for deferred compensation.

Preferred Stock Dividends. Included in the loss applicable to common stock in the Statement of Operations for the year ended December 31, 2004 and 2003 are preferred stock dividends of \$2,247,876 and \$942,903, respectively. The amounts for the years

ended December 31, 2004 and 2003 represents \$341,372 and \$78,581, respectively, of preferred stock dividends paid or payable in cash and \$1,906,504 and \$864,322, respectively, related to the discount representing the beneficial conversion feature of the redeemable convertible preferred stock and the fair value of warrants issued in connection with the preferred stock.

Year Ended December 31, 2003 Compared to Year Ended December 31, 2002

Revenues. Total revenues for the years ended December 31, 2003 and 2002 were \$17,296,508 and \$18,383,810, respectively, the majority of which were contract revenues. Revenues by segment for 2003 and 2002 were as follows:

	<u>2003</u>	<u>2002</u>
Research Division	\$ 6,206,123	\$ 6,951,114
Vermont Operations	6,561,372	7,602,336
Microelectronics Division	4,529,013	3,830,360
Sensor Products Group	<u>—</u>	<u>—</u>
	<u>\$ 17,296,508</u>	<u>\$ 18,383,810</u>

The decrease in revenues for the year ended December 31, 2003 compared to the year ended December 31, 2002 was primarily attributable to a decrease of \$2,477,779 in revenues of the Research Division and Vermont Operations related to the DARPA Contract. In 2002, the Company received higher funding than in 2003 because of the receipt of the initial contract award in September 2002. This decrease was offset in part by an increase of \$751,732 in contract revenues at the Microelectronics Division related to the receipt of approximately \$5 million in contracts from GDAIS in February 2003. For the year ended December 31, 2003 compared to the year ended December 31, 2002, there was also an increase in the NAVAIR Contract revenues of \$984,522 at the Vermont Operations.

Losses. The net loss for the years ended December 31, 2003 and 2002 was \$(3,278,463) and \$(11,500,693), respectively. The loss from continuing operations for those same periods was \$(2,086,714) and \$(2,461,326), respectively, while the loss from operations for those same periods was \$(1,418,624) and \$(3,109,854), respectively. Included in the net loss for the years ended December 31, 2003 and 2002 is a loss from operations of discontinued operations (see below) of \$(1,396,749) and \$(5,839,367), respectively, and a gain (loss) on disposal of discontinued operations for the years ending December 31, 2003 and 2002 of \$205,000 and \$(3,200,000), respectively. Included in the net loss and loss from operations for the year ended December 31, 2003 are asset writedowns of \$346,060. Included in the net loss and loss from operations for the year ended December 31, 2002 is \$1,074,324 for charges recorded related to the retirement benefits associated with the retirement in August 2002 of the Company's former Chairman and Chief Executive Officer. Also, included in the net loss and loss from continuing operations for the year ended December 31, 2002 is a gain on the sale of marketable securities of \$1,349,721. Included in the net loss and loss from continuing operations for the year ended December 31, 2002 is a deferred income tax expense of \$484,423 resulting from an increase in the valuation allowance against the Company's deferred tax assets.

Gross Margins. Gross margins for the fiscal years ended December 31, 2003 and 2002 were 22.9% and 18.6%, respectively. The Company's margins are low because the majority of its revenues are from government contracts or subcontracts, which inherently generate lower margins than product revenues. The increase in the gross margin in 2003 compared to the prior year was primarily due to higher gross margins on the DARPA contract (33.7% and 26.5% in 2003 and 2002, respectively) due in part to a higher utilization of direct labor, a \$245,000 reserve recorded in 2002 for a contract at the Vermont Operations related to estimated cost overruns on that contract and higher gross margins on the Microelectronics Division contract with GDAIS (19.9% and 17.1% in 2003 and 2002, respectively) due to lower material costs in 2003 offset in part by a contract cost overrun of \$70,000 in 2003.

Selling, General and Administrative (SG&A). SG&A expenses for the fiscal years ended December 31, 2003 and 2002 were \$4,508,152 and \$4,594,716, respectively. Decreases in SG&A expenses in 2003 at the Vermont Operations of \$260,284 primarily due to staff and other cost reductions were offset in part by higher ASIC marketing costs of approximately \$119,000 and ISO 9000 costs of approximately \$64,000 incurred by the Microelectronics Division.

Research, Development and Engineering Program (RD&E). The Company's RD&E consists of two types: customer-funded RD&E (U.S. government and other companies) and company-funded RD&E. Both types of RD&E costs are expensed when incurred.

- Customer-funded RD&E costs incurred, included in "Contract Costs of Sales", totaled \$9,606,745 and \$11,528,915 for the fiscal years ended December 31, 2003 and 2002, respectively. The decrease in customer-funded RD&E expenditures for 2003 is related to a decrease in contract costs of \$2,369,387 incurred related to the DARPA contract and decreases in two contracts

at the Vermont Operations of \$399,972 offset in part by an increase in contract costs of \$847,189 related to the NAVAIR Contract.

- Company-funded RD&E costs are included in "Operating Expenses" and totaled \$529,039 and \$854,306 for the fiscal years ended December 31, 2003 and 2002, respectively.

Total RD&E expenditures for 2003 and 2002 were \$10,135,784 and \$12,383,221, respectively. Total RD&E expenditures as a percentage of sales were 58.6% and 67.4% for the years ended December 31, 2003 and 2002, respectively. These expenditures were primarily related to the continued development of CPL systems for the semiconductor industry and the continued development of a high efficiency EUV generation system for advanced semiconductor lithography.

Discontinued Operations. The loss from operations of discontinued operations of \$1,396,749 for the year ended December 31, 2003 consists of \$457,413 related to the standard semiconductor products business primarily associated with the lease of the Irvine facility and legal costs for disputed liabilities of that business offset in part by gains from settlement of certain liabilities. In addition, for 2003, the loss from discontinued operations includes \$939,336 related to JPSI. The loss from operations of discontinued operations of \$5,839,367 for the year ended December 31, 2002 consists of \$1,856,381 related to the standard semiconductor products business and \$3,982,986 related to JPSI, including a facility reserve of \$206,000. The decrease in the loss of operations of discontinued operations is primarily due to the shutdown of the operations of the semiconductor products business in 2002 and the sale of JPSI in July 2003. We were not able to find a buyer for the standard semiconductor products business, accordingly, we shut that business down in mid-2002. There was no loss on disposal because all assets had previously been written off. The gain (loss) on disposal of discontinued operations of \$205,000 and \$(3,200,000) for the years ended December 31, 2003 and 2002, respectively, relates to the sale of JPSI. The loss on disposal of discontinued operations of \$3,200,000 for the year ended December 31, 2002 includes a write-down of inventory of \$2,502,989, a write-down of goodwill and other intangible assets of \$370,485 and a write-down of fixed assets of \$326,526.

Gain on Sale of Marketable Securities. The gain on sale of marketable securities of \$1,349,721 for 2002 is related to the sale of 545,500 shares of the Company's investment in Bede plc in January 2002.

Interest and Other Expense. Interest and other expense for the years ended December 31, 2003 and 2002 was \$731,315 and \$284,174, respectively. Interest and other expense is higher for 2003 versus 2002 primarily due to the financing transactions the Company entered into in 2003 (see "Consolidated Liquidity and Financial Condition" below). Included in interest expense for the year ended December 31, 2003 is \$289,063 related to the beneficial conversion feature associated with the securities issued in these financing transactions. Interest expense for the years ended December 31, 2003 and 2002 also includes \$171,358 and \$48,159, respectively, related to the discounted liability for deferred compensation associated with the retirement in August 2002 of the Company's former Chairman and Chief Executive Officer.

Preferred Stock Dividends. Included in the loss applicable to common stock in the Statement of Operations for the year ended December 31, 2003 are preferred stock dividends of \$942,903. This amount represents \$78,581 of preferred stock dividends paid or payable in cash and \$864,322 related to the discount representing the beneficial conversion feature of the redeemable convertible preferred stock and the fair value of warrants issued in connection with the preferred stock.

Liquidity and Financial Condition

General. Cash and cash equivalents at December 31, 2004 was \$6,599,588. In 2004 and 2003, we have funded our operations primarily from the sale of preferred stock. The increase in cash and cash equivalents during the year ended December 31, 2004 of \$2,428,409 resulted primarily from net proceeds from the issuance of preferred stock of \$9,070,870 offset by cash used in continuing operations operating activities of \$3,763,107 (primarily related to operating losses), payments of notes payable of \$868,642, cash used in discontinued operations of \$778,927, preferred stock redemptions of \$416,667, capital expenditures of \$408,038 and payment of preferred stock dividends of \$249,760.

JMAR will continue to use cash in 2005 for 1) product research and development efforts and to acquire or license products, technologies or businesses; 2) corporate costs, primarily related to the cost of being a public company; 3) preferred stock dividends; and 4) other working capital needs. As a result of the financing activity discussed below, management believes that the Company has adequate resources to fund working capital requirements and product development at least through December 31, 2005. Working capital as of December 31, 2004 and 2003 was \$7,180,382 and \$2,427,166, respectively. The increase in working capital is primarily

due to gross proceeds from the issuance of preferred stock of \$9.5 million and the conversion into common stock of \$1,254,500 of the Company's line of credit, offset in part by the Company's losses.

Issuances of Preferred Stock. In 2004 and 2003, the Company sold the following series of Preferred Stock to Laurus for cash:

Issuance Date	Series	Amount	Dividend	Original Conversion Price	Converted in 2003		Converted in 2004	
					Amount	Shares Issued	Amount	Shares Issued
March, 2003	A	\$ 1,000,000	8%	\$ 0.88	\$ 1,000,000	1,136,363	—	—
March, 2003	B	\$ 1,000,000	3%	\$ 0.88	\$ 1,000,000	1,136,364	—	—
September, 2003	C	\$ 1,500,000	8%	\$ 2.08	—	—	\$ 1,500,000	721,154
December, 2003	D	\$ 2,000,000	8%	\$ 1.56	—	—	\$ 2,000,000	1,282,051
January, 2004	E	\$ 1,500,000	8%	\$ 2.85 (1)	—	—	—	—
February, 2004	F	\$ 2,000,000	Prime (2)	\$ 3.11 (1)	—	—	—	—
February, 2004	G	\$ 2,000,000	Prime (2)	\$ 3.28 (1)	—	—	—	—
February, 2004	H	\$ 4,000,000	Prime (2)	\$ 3.47 (1)	—	—	—	—

(1) Reduced to \$2.00 pursuant to February 1, 2005 agreement (see below)

(2) Prime rate at December 31, 2004 was 5.25 percent

If not previously converted to common stock, the outstanding amount of Series E, F, G and H Preferred Stock must be redeemed in cash (or it could be redeemed with common stock if the closing market price of the Company's common stock is 118% of the Conversion Price or higher for the 11 trading days prior to the redemption date) at various amounts and dates (see below under "Commitments"). Conversions to equity are offset against the required repayments. Except for the conversion price, the conversion terms of the Series E through H Preferred Stock are the same as the conversion terms of the Working Capital Line (see below).

On February 1, 2005, the Company entered into agreements with Laurus to amend the Company's Series E, F, G and H Convertible Preferred Stock (the "Amendments"). The Amendments provide for 1) the deferral of approximately \$3.8 million in monthly redemption payments, as follows: a) payments of the remaining 12 months of redemption payments (\$83,333 per month) for the Series E Preferred Stock are deferred until July, 2006, and b) the next 18 months of redemption payments due under the Series F, G and H Convertible Preferred Stock (\$150,000 per month) are deferred until February, 2007; 2) the grant of a right to the Company to elect to pay the originally scheduled monthly redemption payments with shares of the Company's Common Stock valued at a 15% discount to the then market price; and 3) the reduction in the conversion prices of the Series E-H Preferred Stock (originally ranging from \$2.85 to \$3.47) to \$2.00 per share. The monthly redemption payments under the Series F-H Preferred Stock will recommence in August, 2006 until January, 2007, with the balance of approximately \$4.25 million in the stated amount of the Series F-H Preferred Stock due in February, 2007. These redemption payments will be reduced to the extent that there are conversions of the Preferred Stock into Common Stock.

In connection with all of the above financing transactions with Laurus (Working Capital Line and Series A-H Preferred Stock Issuances), the Company issued warrants to Laurus to purchase a total of 1,390,000 shares of common stock at prices ranging from \$1.058 to \$5.15. In addition, Laurus was granted the right to receive a warrant to purchase one share of common stock at \$3.13 for every \$20 of principal of the Working Capital Line that is converted to equity up to a total of 50,000 shares.

The shares of common stock issuable to Laurus under all of the preferred stock and warrants described above have been included in registration statements declared effective by the Securities and Exchange Commission.

Working Capital Line. In March 2003, the Company entered into a Revolving Fixed Price Convertible Note (Working Capital Line) with Laurus. As of December 31, 2004, there was no amount outstanding under the Working Capital Line. The Working Capital Line allows the Company to borrow from time-to-time up to 85% of eligible accounts receivable of the Company to a maximum of \$3 million. Advances in excess of this formula are allowed, however, with the consent of Laurus. Laurus can convert any portion of the principal outstanding to common stock at a fixed price per share (Conversion Price) any time the market price of the Company's common stock is in excess of the Conversion Price. The Company can convert a portion of the principal outstanding to common stock at the Conversion Price if the market price of the Company's common stock averages 118% of the Conversion Price or higher for 22 consecutive trading days. The initial terms of the Working Capital Line provided that after \$2 million of conversions into equity, the Conversion Price would be increased. The Conversion Price initially was \$.92, but was increased to \$2.85 in January 2004 after \$2 million of the Working Capital Line had been converted.

The interest rate on the Working Capital Line is equal to the prime rate (5.25% at December 31, 2004) plus 0.75 percent, subject to a floor of 5.00 percent. Accrued interest is payable monthly. The Working Capital Line requires that the Company's quick ratio, as

defined, be 0.90 or higher. The quick ratio is defined as the sum of cash and accounts receivable divided by the sum of current liabilities, exclusive of current liabilities of discontinued operations. The Company's quick ratio was 2.87 at December 31, 2004. The term of the Working Capital Line runs until March, 2006. The available borrowings under the Working Capital Line were approximately \$2.6 million at December 31, 2004, all of which was unused at December 31, 2004.

Cash Used in Continuing Operations. Cash used in continuing operations was \$3,763,107 in 2004 compared to \$3,579,238 in 2003. The loss from continuing operations net of non-cash items (depreciation, amortization, debt discount, services received in exchange for common stock or warrants, and patent and equipment write-downs) was \$4,070,018 and \$759,314 in 2004 and 2003, respectively. The higher use of cash in continuing operations in 2004 is primarily due to lower revenues resulting in a lower gross profit in 2004 compared to 2003 of \$1,965,887 and higher product development costs in 2004 compared to 2003 of \$1,193,290. The Company expects revenues to continue at the levels experienced in 2004 until its commercial products enter the marketplace later in 2005. In addition, product development expenditures will increase in 2005 as the Company's product development activities accelerate. Helping cash flow from operations in 2004 was an increase in billings in advance of incurring related costs of \$791,587 related to several of the Company's contracts and orders, primarily the NAVAIR Contract related to milestones achieved in December 2004. Customer deposits decreased by \$832,607 in 2003 related to a large deposit the Company received on one of its contracts in 2001. This contract was completed in 2004 and the Company expects no further customer deposits of that magnitude. Accounts payable and accrued liabilities decreased by \$1,175,069 in 2003 primarily because of the Company's better liquidity position as a result of the financings in March 2003 and because of costs incurred in 2003 on one of the Company's contracts for which a reserve was established in 2002. The decrease in billings in excess of costs incurred in 2002 of \$853,698 was due to milestone billings in 2002 allowed pursuant to two contracts.

Cash Used in Discontinued Operations. In 2004, cash used in discontinued operations was \$778,927 compared to \$2,016,481 in 2003. Cash used in 2004 included losses of \$200,568, payments related to the Irvine facility of \$354,754, payment of \$137,500 to a creditor of the discontinued standard chip business, payments of \$73,340 for a note payable related to assets financed by the discontinued standard chip business and legal payments of \$12,765. The 2003 cash used included non-cash losses of \$944,568, payments of \$429,594 related to the Irvine facility, payment of \$500,000 to a creditor of the discontinued standard chip business, \$76,203 in note payments, legal payments of \$59,175 and other payments of \$6,941. The Company expects cash required for discontinued operations to decline in 2005 to approximately \$300,000, primarily related to the payment of the remaining lease payments for the Irvine facility.

Cash Used in Investing Activities. In 2004, cash used in investing activities, primarily capital expenditures and patent costs, was \$704,885 compared to \$395,697 in 2003. The Company expects an increase in capital expenditures in 2005 primarily related to the ramp-up of manufacturing at the Vermont Operations and consolidation and expansion of its three San Diego facilities into one location.

Cash Provided by Financing Activities. In 2004, cash provided by financing activities was \$7,675,328 compared to \$7,916,331 in 2003. Net proceeds from the sale of preferred stock were \$9,070,870 in 2004 and \$5,202,333 in 2003. In 2004, the Company made note payments of \$868,642, primarily related to the SAL Notes (see Note 8 to Financial Statements) and in 2003 note payments were \$285,999. During 2004, the Company made preferred stock redemptions of \$416,667 (see preferred stock Amendments discussed above). In 2003, net proceeds from the issuance of common stock were \$1,238,899 and \$1,550,000 of restricted cash was released due to the conversion of preferred stock.

Stockholders' Equity. The Company's stockholders' equity was \$5,101,925 as of December 31, 2004. In May, 2003, the Company transferred to the Nasdaq SmallCap Market, where it is required to maintain no less than \$2.5 million of stockholders' equity to retain its listing. Continued losses without increases in equity would cause the Company to fall below this NASDAQ requirement, which would require it to come into compliance or face delisting. The delisting of the Company's stock could adversely affect its ability to raise funds in the future. The Company believes that it has available to it several potential sources of capital to meet NASDAQ listing standards.

Sale of Common Stock in 2005. On February 1, 2005, the Company entered into a Securities Purchase Agreement and completed the sale of \$4 million of the Company's Common Stock and Warrants to five institutional investors (Investors). Pursuant to the Securities Purchase Agreement, the Company issued a total of 3,225,807 shares of Common Stock and Warrants to purchase 1,209,679 shares of Common Stock to the Investors. The Warrants have an exercise price of \$1.73 per share and a term of five years. After expenses of the transaction and the advisor's fee, the Company received net proceeds of approximately \$3,852,000.

Commitments

Future minimum annual commitments under contractual obligations, net of sublease income, and deferred compensation as of December 31, 2004 are as follows (unaudited):

	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>Total</u>
Leases	\$ 664,805	\$ 76,658	\$ 13,749	\$ 13,657	\$ 5,085	\$ 773,954
Deferred compensation	<u>282,377</u>	<u>269,377</u>	<u>269,377</u>	<u>184,484</u>	<u>56,003</u>	<u>1,061,618</u>
	<u>\$ 947,182</u>	<u>\$ 346,035</u>	<u>\$ 283,126</u>	<u>\$ 198,141</u>	<u>\$ 61,088</u>	<u>\$ 1,835,572</u>

The leases are primarily for office facilities. The deferred compensation is presented at the total amount to be paid, whereas the liability has been discounted for financial reporting purposes. Several of the Company's San Diego County facility leases are expiring through April 30, 2006 and the Company expects to enter into a new multi-year lease in the next several months in connection with the consolidation of its San Diego County operations into a single facility.

Preferred Stock Redemption Obligations

Excluded from the above table are redemption obligations under Series E, F, G and H Preferred Stock, as amended on February 1, 2005. Also excluded from the above table is the Company's \$3 million Working Capital Line, as to which no amounts were outstanding at December 31, 2004. If not previously converted, the Series E through H Preferred Stock, as amended, must be redeemed by the Company as follows:

<u>Description</u>	<u>Gross Amount Outstanding at December 31, 2004</u>	<u>Scheduled Redemptions</u>			
		<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>Total</u>
Series E Preferred	\$ 1,083,333	\$ 83,333	\$ 1,000,000	\$ —	\$ 1,083,333
Series F Preferred	\$ 2,000,000	37,500	187,500	1,775,000	2,000,000
Series G Preferred	\$ 2,000,000	37,500	187,500	1,775,000	2,000,000
Series H Preferred	\$ 4,000,000	75,000	375,000	3,550,000	4,000,000
		<u>\$ 233,333</u>	<u>\$ 1,750,000</u>	<u>\$ 7,100,000</u>	<u>\$ 9,083,333</u>

Resolution of SAL Earn-Outs

Under the Merger Agreement entered into in August, 2001 with the former shareholders and creditors of SAL, Inc. (now operating as the Company's Vermont Operations), those persons could have earned up to three contingent earn-out payments upon the satisfaction of certain conditions related to the development and sale of CPL lithography systems. The first earn-out was not achieved by the deadline and, therefore, was not earned by the SAL investors.

Based on the uncertainties of market acceptance of the CPL technology and delays in the completion of the CPL system, which operated to delay the achievement of the second and third earn-outs, on July 9, 2004, the Company sent a letter to former shareholders and creditors (Holders) of SAL, Inc. proposing a final resolution of the second and third earn-outs through payment of a total of \$625,000 in shares of common stock, valued at the average of the closing prices of JMAR's common stock for the five trading days during the period August 18, 2004 to August 24, 2004. Holders of more than 99 percent of the earn-out interests accepted the Company's offer to receive the final payment of \$625,000 in common stock in full satisfaction of all remaining amounts owed under the Merger Agreement.

LXT Alliance Agreement (BioSentry)

During the second quarter of 2004, the Company entered into an alliance agreement with Gregory Quist and David Drake, dba The LXT Group (LXT) to produce an early-warning system (BioSentry™) for drinking water, food and beverage and homeland security markets. As part of the agreement, JMAR loaned the two principals of LXT \$62,500 each and agreed to provide a maximum financial commitment of \$1 million, subject to the achievement of milestones by LXT. Through December 31, 2004, the Company had fulfilled this commitment. The alliance agreement also provided for execution of a purchase agreement (Original Purchase Agreement) after achievement of certain development milestones. In September 2004, the Company and LXT executed a definitive purchase agreement for the purchase by the Company of the LXT business. The closing of the sale of the LXT assets to JMAR was originally scheduled for January 7, 2005, subject to the satisfaction of certain closing conditions, including the achievement of product development, budget and marketing milestones and JMAR's satisfaction with certain intellectual property matters. Because certain of the closing conditions were not satisfied as of January 7, 2005, the closing date was extended pending discussions by LXT and JMAR of the resolution of these closing conditions and the modification to certain of the terms of the Purchase Agreement.

On February 21, 2005, JMAR and LXT executed a Technology Transfer and License Agreement (License Agreement) that terminated and replaced the Original Purchase Agreement. The License Agreement provides for the transfer to JMAR of certain trademarks and rights to certain designs and data related to the BioSentry product, plus the grant of an exclusive, perpetual, worldwide license by LXT to JMAR to use certain technology covered in pending utility patent application filed by LXT in January, 2005 with the United States Patent & Trademark Office entitled "Continuous On-Line Real-Time Surveillance System." The scope of this license is limited to the use of light scattering for detection of microorganism contamination and other particles in water. In consideration for the transfer of the rights and license of the technology described above, JMAR agreed to pay LXT a royalty equal to two percent (2%) of the gross revenue of any nature arising from the BioSentry system used for the detection of microorganisms in water regardless of the technology employed, commencing on the date JMAR receives the first dollar of BioSentry revenue (Revenue Start Date) and continuing until the seventh anniversary thereof. The royalty payments are payable on a quarterly basis within 45 days after the end of each quarter. The License Agreement also modified the outstanding \$125,000 loan to provide that it will no longer be secured by the LXT assets and to provide that it shall be satisfied solely from royalty payments generated from revenues received after the third anniversary of the Revenue Start Date and shall be repaid by payment of 50% of such royalty payments until repaid in full (Amended Loan). The Amended Loan will accrue interest at the "prime rate" starting on April 2, 2005 until satisfied or discharged. In connection with the execution of the License Agreement, JMAR also entered into a Consulting Agreement for Technical and Other Services for the provision of consulting services to JMAR by LXT (Consulting Agreement). Pursuant to the Consulting Agreement, JMAR agrees to engage LXT to perform at least 1100 hours of consulting services at the rate of \$110 per hour until December 31, 2005, with the provision of and payment for a minimum of 50 hours of agreed-upon services in any month. This consulting obligation supersedes and replaces the prior agreement under the Original Purchase Agreement to enter into three year employment agreements.

Net Operating Loss Carryforward

At December 31, 2004, the Company had approximately \$50 million of Federal net operating loss carryforwards subject to certain annual limitations, which expire from 2005 through 2024. To the extent the Company has taxable income in the future, these carryforwards may be used by the Company to reduce its cash outlay for taxes.

Critical Accounting Policies and Estimates

Management's Discussion and Analysis of Financial Condition and Results of Operations discusses JMAR's consolidated financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States. The preparation of these financial statements requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period.

On an ongoing basis, management evaluates its estimates and judgments, including those related to revenues, goodwill and intangible assets, beneficial conversion feature and warrant valuation, deferred taxes and stock based compensation. Management bases its estimates and judgments on historical experience and on various other factors that are believed to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions. Management believes the following critical accounting policies, among others, affect its more significant judgments and estimates used in the preparation of its consolidated financial statements.

Revenues

For each of the three years ended December 31, 2004, 2003 and 2002, in excess of 95% of the Company's revenues were contract revenues, with the remainder mostly spare parts sales and service. Contract revenues are recognized based on the percentage of completion method wherein income is recognized pro-rata over the life of the contract based on the ratio of total incurred costs to anticipated total costs of the contract. The program manager prepares a statement of work, schedule and budget for each contract. At least quarterly, actual costs are compared to budget and technical progress is compared to the planned schedule. The Company prepares an estimate of costs to complete for each contract at least quarterly. Estimated losses based on this review are fully charged to operations when identified. Actual costs could differ from these estimated costs. Reimbursable or recoverable general and administrative (G&A) costs are charged to G&A expense as incurred.

Goodwill and Intangible Assets

In accordance with SFAS No. 142, "Goodwill and Other Intangible Assets," effective January 1, 2002, the Company has established reporting units and applies a two-step fair value approach to evaluating goodwill impairment, using at least an annual assessment. The Company compares the fair value of the business unit with the carrying amount of the assets associated with the business unit. The fair value of each business unit is determined using a risk adjusted discount rate to compute a net present value of estimated future cash flows and a consideration of market capitalization of the Company. The second step measures the amount of the impairment, if any.

Management performed an interim evaluation of goodwill as of June 30, 2004 following notification that no additional funding was included in the Government's fiscal year 2005 budget. A further evaluation of goodwill was performed again as of December 31, 2004. The business units currently identified are Vermont Operations/Research Division, Microelectronics Division and Sensor Products Group. All of the Company's goodwill arose from the acquisition of SAL, Inc. (the predecessor to the Vermont Operations) and is allocated to the Vermont Operations/Research Division business unit. The Research Division and Vermont Operations are viewed as one business unit due to the interrelations of their businesses (i.e., X-ray source related commercialization, including the XRM and XNP products, with the source and technology development coming from the Research Division and the product design, manufacturing engineering, integration, testing and manufacturing performed by the Vermont Operation, as well as the zone plate optics development and manufacturing for the XRM and XNP performed by the Vermont Operations). Additionally, the Vermont Operations will use its core capabilities to perform manufacturing for other products of the Company, as well as performing contract manufacturing for other companies' products.

The discounted cash flow analysis is based on a 7-year projection of revenue, operating expenses, capital expenditures, and working capital requirements and a continuity value of 5 times the 7th year cash flow. The discount rate used for the most recent analysis is 30%, taking into account the riskiness of the new products. Sensitivity analysis is also performed to determine the appropriateness of the assumptions used in the discounted cash flow analysis. As a majority of the Company's expected revenues in the future are based on products that are currently under development, the Company estimates the expected revenues based on its current knowledge of the market and our expectations of successfully penetrating those markets. If our future cash flows vary significantly from our assumptions we may record an impairment of goodwill.

The market capitalization test is used as a complementary test to the discounted cash flow analysis. The Company estimates its market capitalization based on the average stock price over the preceding year and estimates the three business units' relative contribution to the market value of the Company based on shareholder inquiries, emphasis by the Company in discussions with shareholders and others, and emphasis in formal shareholder communications (i.e., press releases).

Capitalized patent costs are amortized over ten years, and other intangible assets are amortized over not more than five years. Capitalized patent costs are reviewed quarterly for utilization and recoverability.

Beneficial Conversion Feature and Warrant Valuation

In accordance with Financial Accounting Standards Board (FASB) Emerging Issues Task Force Issue (EITF) No. 98-5 and FASB EITF No. 00-27, the Company records a beneficial conversion feature (BCF) related to the issuance of convertible preferred stock and convertible debt that have conversion features at fixed rates that are in the money when issued and records the fair value of warrants issued with those instruments. The BCF for the convertible instruments is recognized and measured by allocating a portion of the proceeds to warrants and as a reduction to the carrying amount of the convertible instrument equal to the intrinsic value of the conversion features both of which are credited to paid-in-capital. The Company calculates the fair value of warrants issued with the convertible instruments using the Black Scholes valuation method, using the same assumptions used for valuing employee options for purposes of SFAS #123, except that the contractual life of the warrant is used.

For convertible preferred stock and related warrants, the recorded discount is recognized as a dividend from the date of issuance to the earlier of the redemption dates or the conversion dates using the effective yield method. For convertible debt and related warrants, the recorded discount is recognized as interest expense from the date of issuance to the earlier of the maturity date of the debt or the conversion dates using the effective yield method.

Deferred Taxes

JMAR records a valuation allowance to reduce its deferred tax assets to the amount that management believes is more likely than not to be realized in the foreseeable future, based on estimates of foreseeable future taxable income and taking into consideration historical operating information. In the event management estimates that it will not be able to realize all or part of its net deferred tax assets in the foreseeable future, a valuation allowance is recorded through a charge to income in the period such determination is made. Likewise, should management estimate that it will be able to realize its deferred tax assets in the future in excess of its net recorded asset, an adjustment to reduce the valuation allowance would increase income in the period such determination is made.

Stock-Based Compensation Plans

The Company accounts for its stock option and warrant plans under APB Opinion No. 25, using the intrinsic value method, under which no compensation cost has been recognized for issuances to employees. Options and warrants issued to non-employees (other than directors) are accounted for based on the fair value of the equity instrument issued. The fair value is calculated based on the Black Scholes pricing model. The resulting value is amortized over the service period. In December 2004, the FASB issued FASB Statement No. 123(R), "Share-Based Payment," (SFAS No. 123(R)) which is a revision of SFAS No. 123 and which supersedes APB Opinion No. 25. SFAS No. 123(R) requires all share-based payments to employees, including grants of stock options, to be recognized in the income statement based on their fair values. SFAS No. 123(R) must be adopted no later than July 1, 2005.

Factors That May Affect Future Results

Certain statements contained in this Form 10-K which are not related to historical results are "forward-looking" statements, including statements regarding JMAR's future sales or profit growth, competitive position or products, projects or processes currently under development, the ability of the Company to successfully introduce new products into the commercial marketplace or to apply those products, projects or processes to alternative applications. These forward-looking statements are based on certain assumptions and are subject to certain risks and uncertainties that could cause actual future performance and results to differ materially from those stated or implied in the forward-looking statements.

In addition to the several risks and uncertainties described in the Business Section and in this Management's Discussion and Analysis of Financial Condition and Results of Operations, additional risks and uncertainties include the following:

- delays and unanticipated technological or engineering difficulties in the Company's new product development efforts, which involve lengthy and capital intensive programs that are subject to many unforeseen risks, delays, problems and costs and uncertainties as to the market's demand for such new products;
- the risk that competitors with greater resources enter the markets for the Company's new products;
- the risk that our portfolio of intellectual property does not contain all of the intellectual property rights that may be required to develop, manufacture and commercialize our new products and that we may be unable to license such technologies on reasonable terms;
- the effect of government regulations and required approvals on the BioSentry and X-ray products;
- longer than anticipated purchase approval cycles and more extensive selling efforts in connection with the sale of the Company's new products to utilities and other regulated customers;
- the risk that the Company is subject to claims for product liability arising from the sale of its new products and, specifically with regard to its BioSentry system, that the Company is unable to obtain adequate product liability insurance to cover these risks at a reasonable cost, and that the Company is unable to obtain indemnification agreements from its customers to hold the Company harmless from such claims;
- delays in securing, or inability to secure other financing, whether from the public or private debt or equity markets or from commercial lenders or otherwise, for working capital needs or for development of the Company's new products;
- the continued dilution to current shareholders resulting from the sale of additional equity interests to finance the Company's product development and commercialization efforts;

- unanticipated difficulties and costs in establishing the Company's Vermont operations as the manufacturing center for the Company's new products;
- despite substantial technical, marketing and sales efforts and the expenditure of significant funds by the Company, the failure to convince semiconductor manufacturers to adopt the Company's CPL technology over other existing and possible future alternative lithography technologies;
- the lack of availability of critical components from third party suppliers, including laser diodes, X-ray optics (including zone plates), X-ray masks, photo-resist and holographic optical element, or the inability to obtain such components at acceptable costs;
- fluctuations in margins, or the failure to lower manufacturing costs sufficiently to achieve acceptable margins;
- the failure of pending patents to be issued and uncertainties as to the breadth or degree of protection of existing or future patents covering the Company's X-ray, BioSentry and other technologies and applications; and
- other risks detailed in the Company's Form 8-K, filed March 30, 2005, and in other filings with the Securities and Exchange Commission.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

Board of Directors and Shareholders
JMAR Technologies, Inc.:

We have audited the accompanying consolidated balance sheets of JMAR Technologies, Inc. (a Delaware corporation) as of December 31, 2004 and 2003, and the related consolidated statements of operations, comprehensive loss, stockholders' equity and cash flows for each of the three years in the period ended December 31, 2004. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. Our audit included consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion. An audit also includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the consolidated financial position of JMAR Technologies, Inc. as of December 31, 2004 and 2003, and the consolidated results of its operations and its consolidated cash flows for each of the three years in the period ended December 31, 2004, in conformity with accounting principles generally accepted in the United States of America.

/s/ GRANT THORNTON LLP

Irvine, California
March 18, 2005

JMAR TECHNOLOGIES, INC.
CONSOLIDATED BALANCE SHEETS
As of December 31, 2004 and 2003

	2004	2003
ASSETS		
Current Assets:		
Cash and cash equivalents	\$ 6,599,588	\$ 4,171,179
Accounts receivable	3,090,922	2,802,025
Inventories	335,336	307,152
Prepaid expenses and other	925,943	695,170
Total current assets	10,951,789	7,975,526
Property and equipment, net	879,012	791,773
Intangible assets, net	537,191	684,041
Other assets	642,174	250,936
Goodwill	4,415,932	3,790,907
TOTAL ASSETS	\$ 17,426,098	\$ 13,493,183
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current Liabilities:		
Accounts payable	\$ 943,027	\$ 1,102,873
Accrued liabilities	693,311	491,920
Accrued payroll and related costs	731,718	527,343
Billings in excess of cost incurred	861,383	69,796
Current portion of notes payable and other liabilities	145,019	2,395,445
Current liabilities of discontinued operations, including notes payable	396,949	960,983
Total current liabilities	3,771,407	5,548,360
Notes payable and other long-term liabilities, net of current portion	465,492	449,873
Redeemable convertible preferred stock, 908,333 shares issued and outstanding as of December 31, 2004 and 350,000 shares issued and outstanding as of December 31, 2003, net of unamortized discount of \$996,059 and \$1,282,850, respectively	8,087,274	2,217,150
Commitments and contingencies	—	—
Stockholders' equity:		
Preferred stock, \$.01 par value; 5,000,000 shares authorized; 908,333 issued and outstanding as of December 31, 2004 included in redeemable convertible preferred stock above, and 350,000 issued and outstanding as of December 31, 2003	—	—
Common stock, \$.01 par value; 80,000,000 shares authorized; Issued and outstanding 31,376,735 shares as of December 31, 2004 and 27,654,845 shares as of December 31, 2003	313,767	276,548
Additional paid-in capital	70,087,057	62,420,135
Accumulated deficit	(65,298,899)	(57,418,883)
Total stockholders' equity	5,101,925	5,277,800
TOTAL LIABILITIES AND STOCKHOLDERS' EQUITY	\$ 17,426,098	\$ 13,493,183

The accompanying notes to these consolidated financial statements are an integral part of these consolidated balance sheets.

JMAR TECHNOLOGIES, INC.
CONSOLIDATED STATEMENTS OF OPERATIONS
For the Years Ended December 31, 2004, 2003 and 2002

	<u>2004</u>	<u>2003</u>	<u>2002</u>
Revenues	\$ 10,059,839	\$ 17,296,508	\$ 18,383,810
Costs of revenues	<u>8,061,099</u>	<u>13,331,881</u>	<u>14,970,318</u>
Gross profit	<u>1,998,740</u>	<u>3,964,627</u>	<u>3,413,492</u>
Operating expenses:			
Selling, general and administrative	4,838,641	4,508,152	4,594,716
Research and development	1,722,329	529,039	854,306
Deferred compensation	—	—	1,074,324
Patent and equipment writedowns	<u>191,575</u>	<u>346,060</u>	<u>—</u>
Total operating expenses	<u>6,752,545</u>	<u>5,383,251</u>	<u>6,523,346</u>
Loss from operations	(4,753,805)	(1,418,624)	(3,109,854)
Realized gain on sale of marketable securities	—	—	1,349,721
Interest and other income	158,144	63,225	67,404
Interest and other expense	<u>(821,586)</u>	<u>(731,315)</u>	<u>(284,174)</u>
Loss from continuing operations before income taxes	(5,417,247)	(2,086,714)	(1,976,903)
Income tax expense	<u>—</u>	<u>—</u>	<u>(484,423)</u>
Loss from continuing operations	(5,417,247)	(2,086,714)	(2,461,326)
Discontinued operations:			
Loss from operations of discontinued operations	(214,893)	(1,396,749)	(5,839,367)
Gain (loss) on disposal of discontinued operations	<u>—</u>	<u>205,000</u>	<u>(3,200,000)</u>
Net loss	(5,632,140)	(3,278,463)	(11,500,693)
Deemed preferred stock dividends	<u>(2,247,876)</u>	<u>(942,903)</u>	<u>—</u>
Loss applicable to common stock	<u>\$ (7,880,016)</u>	<u>\$ (4,221,366)</u>	<u>\$ (11,500,693)</u>
Basic and diluted loss per share:			
Loss per share from continuing operations	\$ (0.25)	\$ (0.12)	\$ (0.11)
Loss per share from discontinued operations	<u>(0.01)</u>	<u>(0.04)</u>	<u>(0.38)</u>
Basic and diluted loss per share applicable to common stock	<u>\$ (0.26)</u>	<u>\$ (0.16)</u>	<u>\$ (0.49)</u>
Shares used in computation of basic and diluted loss per share	<u>30,758,689</u>	<u>25,618,296</u>	<u>23,618,169</u>

The accompanying notes to these consolidated financial statements are an integral part of these consolidated statements.

JMAR TECHNOLOGIES, INC.
CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS
For the Years Ended December 31, 2004, 2003 and 2002

	<u>2004</u>	<u>2003</u>	<u>2002</u>
Net loss	\$ (5,632,140)	\$ (3,278,463)	\$ (11,500,693)
Other comprehensive loss:			
Holding losses	—	—	(75,143)
Reclassification adjustment for gains included in net loss	—	—	(1,349,721)
Other comprehensive loss	—	—	(1,424,864)
Comprehensive loss	\$ (5,632,140)	\$ (3,278,463)	\$ (12,925,557)

The accompanying notes to these consolidated financial statements are an integral part of these consolidated statements.

JMAR TECHNOLOGIES, INC.
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
For the Years Ended December 31, 2004, 2003 and 2002

	Common Stock		Preferred Stock		Additional Paid-in	Accumulated Other Comprehensive Income	Accumulated Deficit	Total Equity
	Shares	Amount	Shares	Amount				
Balance, December 31, 2001	22,840,392	\$ 228,404	—	\$ —	\$ 54,343,211	\$ 1,424,864	\$(41,696,824)	\$ 14,299,655
Issuance of stock for services	11,632	116	—	—	11,053	—	—	11,169
Change in unrealized gain on marketable securities	—	—	—	—	—	(1,424,864)	—	(1,424,864)
Issuance of common stock and warrants	1,000,000	10,000	—	—	1,769,920	—	—	1,779,920
Modification to existing option and warrant terms	—	—	—	—	512,807	—	—	512,807
Net loss	—	—	—	—	—	—	(11,500,693)	(11,500,693)
Balance, December 31, 2002	23,852,024	238,520	—	—	56,636,991	—	(53,197,517)	3,677,994
Issuance of stock and warrants for services	11,026	110	—	—	42,512	—	—	42,622
Issuance of common stock from preferred stock conversions (net of costs of \$46,267)	2,272,727	22,727	—	—	1,931,006	—	—	1,953,733
Issuance of common stock from working capital line conversions	1,275,000	12,750	—	—	1,160,250	—	—	1,173,000
Beneficial conversion feature of preferred stock and working capital line, and fair value of warrants	—	—	—	—	2,262,240	—	—	2,262,240
Issuance of common stock and warrants for cash	100,000	1,000	—	—	99,000	—	—	100,000
Stock issued upon exercise of warrant	144,068	1,441	—	—	288,136	—	—	289,577
Preferred stock dividends	—	—	—	—	—	—	(942,903)	(942,903)
Net loss	—	—	—	—	—	—	(3,278,463)	(3,278,463)
Balance, December 31, 2003	27,654,845	276,548	—	—	62,420,135	—	(57,418,883)	5,277,800
Issuance of stock and warrants for services	11,604	117	—	—	142,083	—	—	142,200
Issuance of common stock from preferred stock conversions (net of costs of \$96,584)	2,003,205	20,032	—	—	3,383,384	—	—	3,403,416
Issuance of common stock from working capital line conversions	1,048,913	10,489	—	—	1,244,011	—	—	1,254,500
Beneficial conversion feature of preferred stock and working capital line, and fair value of warrants	—	—	—	—	1,772,225	—	—	1,772,225
Issuance of common stock related to SAL earn-out	593,787	5,938	—	—	986,335	—	—	992,273
Repurchase of stock	(7,552)	(76)	—	—	(17,671)	—	—	(17,747)
Stock issued upon exercise of options	71,933	719	—	—	156,555	—	—	157,274
Preferred stock dividends	—	—	—	—	—	—	(2,247,876)	(2,247,876)
Net loss	—	—	—	—	—	—	(5,632,140)	(5,632,140)
Balance, December 31, 2004	<u>31,376,735</u>	<u>\$ 313,767</u>	<u>—</u>	<u>\$ —</u>	<u>\$ 70,087,057</u>	<u>\$ —</u>	<u>\$(65,298,899)</u>	<u>\$ 5,101,925</u>

The accompanying notes to these consolidated financial statements are an integral part of these consolidated statements.

JMAR TECHNOLOGIES, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS
For the Years Ended December 31, 2004, 2003 and 2002

	2004	2003	2002
Cash flows from operating activities:			
Loss from continuing operations	\$ (5,417,247)	\$ (2,086,714)	\$ (2,461,326)
Adjustments to reconcile loss from continuing operations to net cash used in continuing operations:			
Depreciation, amortization and debt discount	1,013,571	938,718	777,317
Services received in exchange for common stock or warrants	142,083	42,622	11,169
Gain on sale of marketable securities	—	—	(1,349,721)
Deferred compensation	—	—	512,807
Patent and equipment write-downs	191,575	346,060	—
Change in assets and liabilities:			
Accounts receivable	(288,897)	92,368	1,307,241
Inventories	18,597	82,315	(94,983)
Prepaid expenses and other	(475,924)	(133,233)	390,889
Customer deposits	—	(832,607)	(647,779)
Billings in excess of costs incurred	791,587	(853,698)	—
Accounts payable and accrued liabilities	261,548	(1,175,069)	1,078,871
Net cash used in continuing operations operating activities	(3,763,107)	(3,579,238)	(475,515)
Loss from discontinued operations	(214,893)	(1,191,749)	(9,039,367)
Changes in net assets and liabilities of discontinued operations	(564,034)	(824,732)	5,143,770
Net cash used in discontinued operations	(778,927)	(2,016,481)	(3,895,597)
Net cash used in operating activities	(4,542,034)	(5,595,719)	(4,371,112)
Cash flows from investing activities:			
Proceeds from sale of marketable securities	—	—	1,399,746
Capital expenditures	(408,038)	(123,393)	(393,564)
Additions of intangible assets, other assets and goodwill	(359,347)	(272,304)	(204,157)
Payments received on notes receivable	62,500	—	—
Net cash provided by (used in) investing activities	(704,885)	(395,697)	802,025
Cash flows from financing activities:			
Net proceeds from the issuance of preferred stock	9,070,870	5,202,333	—
Cash payments of preferred stock dividends	(249,760)	(78,479)	—
Payments of notes payable and other long-term liabilities	(868,642)	—	(41,463)
Preferred stock redemptions	(416,667)	—	—
Repurchase of stock	(17,747)	—	—
Net proceeds from the issuance of common stock	—	1,238,899	1,779,920
Net payments under line of credit	—	(285,999)	(1,450,000)
Decrease in restricted cash	—	1,550,000	1,450,000
Net proceeds from the exercise of options and warrants	157,274	289,577	—
Net cash provided by financing activities	7,675,328	7,916,331	1,738,457
Net increase (decrease) in cash and cash equivalents	2,428,409	1,924,915	(1,830,630)
Cash and cash equivalents, beginning of period	4,171,179	2,246,264	4,076,894
Cash and cash equivalents, end of period	\$ 6,599,588	\$ 4,171,179	\$ 2,246,264
Cash paid during the year for interest	\$ 242,265	\$ 314,218	\$ 183,466

SUPPLEMENTAL DISCLOSURE OF NON-CASH ACTIVITY: During the years ended December 31, 2004 and 2003, the holder of the Convertible Preferred Stock converted \$3,500,000 and \$2,000,000, respectively, of the preferred stock into 2,003,205 and 2,272,727 shares, respectively, of common stock of the Company. The Company recorded a discount of \$1,772,225 and \$2,251,967 representing the beneficial conversion feature of the redeemable convertible preferred stock and debt and the fair value of warrants issued in connection with the preferred stock and debt transactions in 2004 and 2003, respectively (see Notes 8 and 11). In addition, during the year ended December 31, 2004, \$1,254,500 of the Company's working capital line of credit was converted into 1,048,913 shares of common stock of the Company (see Note 8). Also, during the year ended December 31, 2004, the Company repaid \$364,239 in convertible notes and \$3,034 in accrued interest with the issuance of 118,121 shares of common stock (see Note 8). During the year ended December 31, 2004, the Company issued 475,666 shares of common stock to the former shareholders and creditors of SAL, Inc. in full satisfaction of outstanding earn-outs relating to the acquisition of SAL, Inc. (see Note 11).

The accompanying notes to these consolidated financial statements are an integral part of these consolidated statements.

JMAR TECHNOLOGIES, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
December 31, 2004 and 2003

1. Description of the Company

The accompanying consolidated financial statements include the accounts of JMAR Technologies, Inc. (the "Company" or "JMAR") and its subsidiaries. All significant intercompany balances and transactions have been eliminated in consolidation.

JMAR Technologies, Inc. is a leading innovator in the development of laser-based equipment for imaging, analysis and fabrication at the nano-scale. The Company is leveraging over a decade of laser and photonics research to develop a diverse portfolio of products with commercial applications in rapidly growing industries while continuing to carry out research and development for the U.S. Defense Advanced Research Projects Agency (DARPA) and support for the U.S. Government's Defense Microelectronics Activity (DMEA) semiconductor fabrication facility. JMAR is targeting the nanotechnology, bioscience and semiconductor industries with its Britelight™ Laser; X-ray Light Source; Compact X-ray Microscope — for 3D visualization of single cells and polymers; and its X-ray Nano Probe — enabling interaction, analysis and materials modification at the nano-scale. JMAR also develops, manufactures and markets its BioSentry™ microorganism early warning system and maintains a strategic alliance for the production of the READ chemical sensor for homeland security, environmental and utility infrastructure industries.

2. Summary of Significant Accounting Policies

a. Cash and Cash Equivalents

The Company defines cash and cash equivalents to include cash on hand and cash invested in short-term securities that have original maturities of less than 90 days.

b. Fair Value of Financial Instruments

The carrying value of certain of the Company's financial instruments, including accounts receivable, accounts payable and accrued expenses, approximates fair value due to their short maturities. Based on borrowing rates currently available to the Company for loans with similar terms, the carrying value of its notes payable, capital lease obligations and borrowings under the Company's line of credit approximates fair value.

c. Pervasiveness of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

d. Inventories

Inventories are carried at the lower of cost, on the first-in, first-out basis, or market and are comprised of materials, direct labor and applicable manufacturing overhead. Quarterly, any known excess and/or obsolete inventory, based on changes in the business or other factors, are evaluated and the reserve increased accordingly, or inventory is written down to reflect its new cost basis. Once written down, the carrying value of inventory is not increased.

e. Income Taxes

The Company accounts for income taxes in accordance with Statement of Financial Accounting Standards (SFAS) No. 109. Under the asset and liability method of SFAS No. 109, deferred tax assets and liabilities are recognized for the future tax consequences attributable to temporary differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases.

Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. Under SFAS No. 109, the effect on deferred tax assets and liabilities of a change in tax rates is recognized in income in the period that includes the enactment date.

JMAR records a valuation allowance to reduce its deferred tax assets to the amount that management believes is more likely than not to be realized in the foreseeable future, based on estimates of foreseeable future taxable income and taking into consideration historical operating information. In the event management estimates that it will not be able to realize all or part of its net deferred tax assets in the foreseeable future, a valuation allowance is recorded through a charge to income in the period such determination is made. Likewise, should management estimate that it will be able to realize its deferred tax assets in the future in excess of its net recorded asset, an adjustment to reduce the valuation allowance would increase income in the period such determination is made.

f. Property and Equipment

Property and equipment are recorded at cost. Depreciation and amortization are provided over the asset's estimated useful life of three to ten years, using the straight-line method. Maintenance and repairs are expensed as incurred. Costs capitalized for self-constructed assets include direct material, labor and applicable overhead. Leasehold improvements are amortized over the shorter of the asset's estimated useful life or the life of the related lease.

g. Goodwill and Other Intangible Assets

In accordance with SFAS 142, the Company has established reporting units and applies a two-step fair value approach to evaluating goodwill impairment, using at least an annual assessment. The Company compares the fair value of the business unit with the carrying amount of the assets associated with the business unit. The fair value of each business unit is determined using a risk adjusted discount rate to compute a net present value of estimated future cash flows and a consideration of market capitalization of the Company. The second step measures the amount of the impairment, if any.

Management performed an interim evaluation of goodwill as of June 30, 2004 following notification that no additional funding was included in the Government's fiscal year 2005 budget. A further evaluation of goodwill was performed again as of December 31, 2004. The business units currently identified are Vermont Operations/Research Division, Microelectronics Division and Sensor Products Group. All of the Company's goodwill arose from the acquisition of SAL, Inc. (the predecessor to the Vermont Operations) and is allocated to the Vermont Operations/Research Division business unit. The Research Division and Vermont Operations are viewed as one business unit due to the interrelations of their businesses (i.e., X-ray source related commercialization, including the XRM and XNP products, with the source and technology development coming from the Research Division and the product design, manufacturing engineering, integration, testing and manufacturing performed by the Vermont Operations, as well as the zone plate optics development and manufacturing for the XRM and XNP performed by the Vermont Operations). Additionally, the Vermont Operations will use its core capabilities to perform manufacturing for other products of the Company, as well as performing contract manufacturing for other companies' products.

The discounted cash flow analysis is based on a 7-year projection of revenue, operating expenses, capital expenditures, and working capital requirements and a continuity value of 5 times the 7th year cash flow. The discount rate used for the most recent analysis is 30%, taking into account the riskiness of the new products. Sensitivity analysis is also performed to determine the appropriateness of the assumptions used in the discounted cash flow analysis. As a majority of the Company's expected revenues in the future are based on products that are currently under development, the Company estimates the expected revenues based on its current knowledge of the market and our expectations of successfully penetrating those markets. If our future cash flows vary significantly from our assumptions, we may record an impairment of goodwill.

The market capitalization test is used as a complementary test to the discounted cash flow analysis. The Company estimates its market capitalization based on the average stock price over the preceding year and estimates the three business units' relative contribution to the market value of the Company based on shareholder inquiries, emphasis by the Company in discussions with shareholders and others, and emphasis in formal shareholder communications (i.e., press releases).

h. Intangible Assets

Capitalized patent costs are amortized over ten years, and other intangible assets are amortized over not more than five years. Accumulated amortization of intangible assets was \$947,091 and \$784,083 at December 31, 2004 and 2003, respectively. Capitalized patent costs are reviewed quarterly for utilization and recoverability.

i. Long-Lived Assets

The Company periodically evaluates the carrying value of its long-lived assets and applies the provisions of SFAS No. 144, "Accounting for the Impairment or Disposal of Long-Lived Assets." Under SFAS No. 144, long-lived assets and certain identifiable assets to be held and used in operations are reviewed for impairment whenever events or circumstances indicate that the carrying amount of an asset may not be fully recoverable. An impairment loss is recognized if the sum of the expected long-term, undiscounted cash flows is less than the carrying amount of the long-lived assets being evaluated. Management believes the carrying value of its long-lived assets does not exceed their estimated net realizable value.

The net assets and liabilities of a disposal group classified as held for sale is presented separately in the asset and liability sections of the consolidated balance sheet. The major classes of assets and liabilities classified as held for sale are separately disclosed in the notes to financial statements. In accordance with SFAS No. 144, the Company classifies assets held for sale when management commits to a plan of disposal, the disposal group is available for immediate sale and an active plan to locate a buyer has been initiated.

j. Revenues

For each of the three years ended December 31, 2004, 2003 and 2002, in excess of 95% of the Company's revenues were contract revenues, with the remainder mostly spare parts sales and service. Contract revenues are recognized based on the percentage of completion method wherein income is recognized pro-rata over the life of the contract based on the ratio of total incurred costs to anticipated total costs of the contract. Actual costs could differ from these estimated costs. Reimbursable or recoverable general and administrative (G&A) costs are charged to G&A expense as incurred. Estimated losses are fully charged to operations when identified.

k. Beneficial Conversion Feature and Warrant Valuation

In accordance with Financial Accounting Standards Board (FASB) Emerging Issues Task Force Issue (EITF) No. 98-5 and EITF No. 00-27, the Company records a beneficial conversion feature (BCF) related to the issuance of convertible preferred stock and convertible debt that have conversion features at fixed rates that are in-the-money when issued and records the fair value of warrants issued with those instruments. The BCF for the convertible instruments is recognized and measured by allocating a portion of the proceeds to warrants and as a reduction to the carrying amount of the convertible instrument equal to the intrinsic value of the conversion features, both of which are credited to paid-in-capital. The Company calculates the fair value of warrants issued with the convertible instruments using the Black Scholes valuation method, using the same assumptions used for valuing employee options for purposes of SFAS #123 (see Note 1m), except that the contractual life of the warrant is used.

For convertible preferred stock and related warrants, the recorded discount is recognized as a dividend from the date of issuance to the earlier of the redemption dates or the conversion dates using the effective yield method. For convertible debt and related warrants, the recorded discount is recognized as interest expense from the date of issuance to the earlier of the maturity date of the debt or the conversion dates using the effective interest yield method.

l. Earnings Per Share

The Company accounts for earnings per share in accordance with SFAS No. 128, "Earnings per Share". Basic earnings per common share were computed by dividing loss applicable to common stock by the weighted average number of shares of common stock outstanding during the year. For the years ended December 31, 2004, 2003 and 2002, the denominator in the diluted loss per share computation was the same as the denominator for basic loss per share due to antidilutive effects of the Company's warrants, stock options, convertible debt and convertible preferred stock. As of December 31, 2004, 2003 and 2002, the Company had shares issuable under outstanding warrants, stock options, convertible debt and convertible preferred stock of 7,982,506, 8,124,184 and 4,647,075, respectively, all of which are antidilutive and were excluded from the computation of diluted loss per share.

m. Stock Options

The Company has adopted the disclosure only requirements of SFAS No. 123, "Accounting for Stock-Based Compensation". Options and warrants issued to non-employees (other than directors) are accounted for based on the fair value of the equity instrument issued. The fair value is computed using the Black Scholes pricing model. The resulting value is amortized over the service period.

The Company accounts for these plans under APB Opinion No. 25, using the intrinsic value method, under which no compensation cost has been recognized for issuance to employees. Had compensation cost for these plans been determined using the fair value method under SFAS No. 123, the Company's loss applicable to common stock and loss per share would have been the following pro forma amounts (unaudited):

		<u>2004</u>	<u>2003</u>	<u>2002</u>
Loss applicable to common stock:	As Reported	\$ (7,880,016)	\$ (4,221,366)	\$ (11,500,693)
Stock based compensation expense		<u>(816,710)</u>	<u>(1,028,140)</u>	<u>(1,940,999)</u>
	Pro Forma	<u>\$ (8,696,726)</u>	<u>\$ (5,249,506)</u>	<u>\$ (13,441,692)</u>
Basic and diluted loss per share:	As Reported	\$ (0.26)	\$ (0.16)	\$ (0.49)
Stock based compensation expense		<u>(0.02)</u>	<u>(0.04)</u>	<u>(0.08)</u>
	Pro Forma	<u>\$ (0.28)</u>	<u>\$ (0.20)</u>	<u>\$ (0.57)</u>

The fair value of each option and warrant grant is estimated on the date of grant using the Black Scholes option pricing model with the following weighted-average assumptions used for grants in 2004, 2003 and 2002: risk-free interest rate of approximately 4.41 percent in 2004, 2.74 percent in 2003 and 4 percent in 2002; expected dividend yields of 0 percent and expected lives of 6 years. For grants in 2004, 2003 and 2002, the expected volatility used was 255 percent, 275 percent, 142 percent, respectively.

n. Comprehensive Income (Loss)

SFAS No. 130, "Reporting Comprehensive Income," establishes standards for reporting and display of comprehensive income and its components (revenues, expenses, gains and losses). This statement requires that an enterprise: (a) classify the items of other comprehensive income by their nature in a financial statement; and (b) display the accumulated balance of other comprehensive income separately from stockholders' equity in the equity section of the balance sheet. The unrealized gain (loss) for the year ended December 31, 2002 results from changes in the value of the Company's investment in Bede plc.

o. Reclassifications

Certain reclassifications have been made to the prior year financial statements to conform with the 2004 presentation.

p. Recent Accounting Pronouncements

In December 2004, the Financial Accounting Standards Board (FASB) issued FASB Statement No. 123(R), "Share-Based Payment," (SFAS No. 123(R)) which is a revision of SFAS No. 123. SFAS No. 123(R) supersedes APB Opinion No. 25, "Accounting for Stock Issued to Employees," and amends FASB Statement No. 95, "Statement of Cash Flows." Generally, the approach in SFAS No. 123(R) is similar to the approach described in SFAS 123. However, SFAS No. 123(R) requires all share-based payments to employees, including grants of employee stock options, to be recognized in the income statement based on their fair values. Pro forma disclosure is no longer an alternative. SFAS No. 123(R) must be adopted no later than July 1, 2005. Management is still evaluating the methodology to be used and has not determined the impact on the Company's financial statements in the future. However, based upon the proforma disclosures in Note 2(m), management anticipates that the impact could be as much as \$1 million annually for currently outstanding options.

In November 2004, the FASB issued FASB Statement No. 151, "Inventory Costs," an amendment of ARB No. 43, Chapter 4, which is effective for inventory costs incurred during fiscal years beginning after June 15, 2005. The amendments made by Statement 151 will improve financial reporting by clarifying that abnormal amounts of idle facility expense, freight, handling costs, and wasted materials (spoilage) should be recognized as current-period charges and by requiring the allocation of fixed production overheads to inventory based on the normal capacity of the production facilities. The Company does not believe that the adoption of Statement 151 will have a significant effect on its financial statements.

3. Acquisitions

Semiconductor Advanced Lithography, Inc.

On August 7, 2001, the Company's wholly owned subsidiary, JMAR/SAL NanoLithography, Inc. (Subsidiary) acquired all of the outstanding equity of Semiconductor Advanced Lithography, Inc. (SAL), in a merger of SAL with and into Subsidiary (Acquisition). SAL (subsequently renamed JMAR/SAL NanoLithography, Inc. or "JSAL") is a provider of XRL stepper systems and the leading developer of CPL systems. Consideration for the Acquisition consisted of an aggregate of 603,051 shares of the Company's common stock valued at \$1.7 million, \$1.2 million in cash and \$1.2 million in notes (SAL Notes). The SAL Notes were repaid in February

2004, plus accrued interest, by retiring a total of \$364,239 in notes and \$3,034 in accrued interest with the issuance of 118,121 shares of common stock valued at \$3.11 per share and repaying the remaining amount of \$835,761 in notes and accrued interest of \$6,961 with cash. The \$3.11 per share value was calculated based on 85 percent of the 5 day average closing prices of the Company's common stock prior to the last day for the SAL Noteholders to accept the offer. This formula was based on negotiations between the Company and the Noteholders' representative. All stock options and warrants issued by SAL which were outstanding immediately prior to the Acquisition were either exercised pursuant to their terms or were terminated. There were no settlements of options or warrants and there was no increase to JMAR's purchase price as a result of the issuance of additional SAL shares upon exercise of the outstanding options and warrants.

The Company accounted for the Acquisition as a purchase and, accordingly, results of operations of JSAL have been included in the consolidated financial statements since August 7, 2001. The allocation of the original purchase price of \$4,297,414 (including transaction costs) is as follows:

Goodwill	\$ 3,790,907
Identifiable intangibles	785,000
Fair value of tangible assets acquired	671,593
Liabilities assumed	<u>(950,086)</u>
	<u>\$ 4,297,414</u>

Under the Merger Agreement entered into in August, 2001 with the former shareholders and creditors of SAL, Inc. (now operating as the Company's Vermont Operations), those persons could have earned up to three contingent earn-out payments upon the satisfaction of certain conditions related to the development and sale of CPL lithography systems. The first earn-out was not achieved by the deadline and, therefore, was not earned by the SAL investors.

Based on the uncertainties of market acceptance of the CPL technology and delays in the completion of the CPL system, which operated to delay the achievement of the second and third earn-outs, on July 9, 2004, the Company sent a letter to former shareholders and creditors (Holders) of SAL, Inc. proposing a final resolution of the second and third earn-outs through payment of a total of \$625,000 in shares of common stock, valued at the average of the closing prices of JMAR's common stock for the five days during the period August 18, 2004 to August 24, 2004. Holders of more than 99 percent of the earn-out interests accepted the Company's offer to receive the final payment of \$625,000 in common stock in full satisfaction of all remaining amounts owed under the Merger Agreement. The additional consideration of \$625,000 is included in goodwill on the accompanying Balance Sheet (see Note 11).

4. Accounts Receivable

At December 31, 2004 and 2003, accounts receivable consisted of the following:

	<u>2004</u>	<u>2003</u>
Billed	\$ 944,046	\$ 1,068,628
Unbilled	<u>2,146,876</u>	<u>1,733,397</u>
	<u>\$ 3,090,922</u>	<u>\$ 2,802,025</u>

All unbilled receivables at December 31, 2004 are expected to be billed and collected within one year. Payments to the Company for performance on certain U.S. Government contracts is subject to progress payment audits by the Defense Contract Audit Agency and are recorded at the amounts expected to be realized. Included in the unbilled amount is \$1,269,000 related to the Company's contract with DARPA (see Note 16). Of the remaining balance of unbilled receivables, \$329,912 is related to withheld fees for prior contracts to be billed pending DCAA audit, and \$547,964 is related to the normal billing cycle and timing of billings.

5. Inventories

At December 31, 2004 and 2003, inventories consisted of the following:

	<u>2004</u>	<u>2003</u>
Raw materials, components and sub-assemblies	\$ 88,684	\$ 214,694
Work-in-process	245,498	87,981
Finished goods	<u>1,154</u>	<u>4,477</u>
	<u>\$ 335,336</u>	<u>\$ 307,152</u>

Work-in-process increased between 2004 and 2003 due to work performed related to two laser system orders received in 2004.

6. Property and Equipment

At December 31, 2004 and 2003, property and equipment consisted of the following:

	<u>2004</u>	<u>2003</u>
Equipment and machinery	\$ 3,156,252	\$ 2,774,470
Furniture and fixtures	440,990	435,043
Leasehold improvements	<u>283,218</u>	<u>280,283</u>
	3,880,460	3,489,796
Less-Accumulated depreciation	<u>(3,001,448)</u>	<u>(2,698,023)</u>
	<u>\$ 879,012</u>	<u>\$ 791,773</u>

During 2003, the Company wrote-off a modular clean room asset of the Research Division in the amount of \$200,056. Because of the evolution of the Company's business, management determined that this asset would not be required in the future. The asset was disposed of in 2003, at no recovery to the Company. This write-off is included in "patents and equipment write-downs" in the accompanying Statements of Operations.

7. Commitments and Contingencies

a. Leases

The Company leases its office facilities under various operating leases expiring through May, 2006. Minimum future rental payments for non-cancelable leases as of December 31, 2004, are as follows:

Year Ending December 31,	
2005	\$ 664,805
2006	76,658
2007	13,749
2008	13,657
2009	<u>5,085</u>
	<u>\$ 773,954</u>

Related rent expense was \$1,158,507, \$1,193,998 and \$1,185,303 for the years ended December 31, 2004, 2003 and 2002, respectively.

b. Deferred Compensation

Pursuant to an Employment Agreement dated September, 2001 with Dr. Martinez, the Company's former Chairman and Chief Executive Officer, if the Company delivered notice of its intention not to renew or discontinued his status of Chairman or CEO, or both, other than for cause, then Dr. Martinez's employment was to continue for three years at the highest total compensation rate (including bonuses, director fees and similar payments) he had received in any previous 12 month period. This amount was approximately \$375,000 per annum. In such event, the Company also agreed to maintain comparable medical insurance benefits for such three year period.

In May, 2002, Dr. Martinez informed the Board of Directors of his desire to retire. The Board and Dr. Martinez engaged in discussions regarding Dr. Martinez's future role with the Company. In order to set a definite date for the transition to a new CEO, in July, 2002, the Board of Directors exercised the Company's rights under the Employment Agreement to discontinue Dr. Martinez's status as CEO effective August 16, 2002. Following negotiations between Dr. Martinez and the Board, an agreement was reached to restructure this payment obligation to spread the payments over six years to reduce the impact of the original agreement on the Company's cash flow. In consideration for this modification, the Company will provide comparable medical insurance benefits for six years, and modified 942,242 of the outstanding options and warrants held by Dr. Martinez to (1) vest all unvested options and warrants (141,269 options), (2) provide that, for those options that have an expiration date within the next six years, the early termination provision that would otherwise have resulted in the termination of the options and warrants 60 days after termination of his employment was waived, and (3) provide that all remaining options and warrants will expire on the later of August 15, 2008 or 60 days after Dr. Martinez ceases to be a director. The Company recorded a charge in 2002 in the amount of \$1,074,324 resulting from this event. The charge includes \$561,517 for the discounted deferred compensation payments over six years, using a discount rate of

30 percent, and \$512,807 for the intrinsic value of Dr. Martinez's options and warrants resulting from the modification of those options and warrants.

The Company also has a deferred compensation arrangement with a former employee for amounts withheld by that employee from his pay. The amount of the discounted liability for this employee included on the accompanying Balance Sheet at December 31, 2004 is \$160,638.

The Company recorded interest expense of \$180,126, \$171,358 and \$48,159 in 2004, 2003 and 2002, respectively, for the amortization of the discounts. Total deferred compensation obligations for 2005 through 2009 are \$282,377, \$269,377, \$269,377, \$184,484 and \$56,003, respectively. The Company has accounted for these individual deferred compensation arrangements in accordance with Accounting Principles Board Nos. 12 and 21.

8. Notes Payable and Other Long-term Obligations

Notes payable and other long-term obligations as of December 31, 2004 and 2003, were as follows:

	<u>2004</u>	<u>2003</u>
Working capital line with Laurus in the amount of \$3,000,000. Advances bear interest at the prime rate (5.25% and 4% at December 31, 2004 and 2003, respectively) plus .75%, but not less than 5%. Interest on the line is payable monthly. Advances are secured by all assets of the Company. Borrowings may be converted to common stock	\$ —	\$ 1,140,431
Convertible notes payable issued to former shareholders and creditors of SAL, Inc. bearing interest at 8% interest due quarterly, principal paid in February 2004	—	1,200,000
Deferred compensation, less discount of \$451,107 and \$477,875 at December 31, 2004 and 2003, respectively (see Note 7)	<u>610,511</u>	<u>504,887</u>
	610,511	2,845,318
Less: Current portion	<u>(145,019)</u>	<u>(2,395,445)</u>
	<u>\$ 465,492</u>	<u>\$ 449,873</u>

In March 2003, the Company entered into a Revolving Fixed Price Convertible Note (Working Capital Line) with Laurus Master Fund (Laurus). As of December 31, 2004 there was no amount outstanding under the Working Capital Line. The Working Capital Line allows the Company to borrow from time-to-time up to 85% of eligible accounts receivable of the Company to a maximum of \$3 million. Advances in excess of this formula are allowed, however, with the consent of Laurus. Laurus can convert any portion of the principal outstanding to common stock at a fixed price per share (Conversion Price) any time the market price of the Company's common stock is in excess of the Conversion Price. The Company can convert a portion of the principal outstanding to common stock at the Conversion Price if the market price of the Company's common stock averages 118% of the Conversion Price or higher for 22 consecutive trading days. The initial terms of the Working Capital Line provided that after \$2 million of conversions into equity, the Conversion Price would be increased. The Conversion Price initially was \$.92, but was increased to \$2.85 in January 2004 after \$2 million of the Working Capital Line had been converted at which time the Company granted additional warrants for the purchase of 100,000 shares of its common stock. For the years ended December 31, 2004 and 2003, \$1,254,500 and \$1,173,000, respectively, of the Working Capital Line was converted into 1,048,913 and 1,275,000 shares of common stock, respectively (see Note 11).

The interest rate on the Working Capital Line is equal to the prime rate (5.25% at December 31, 2004) plus 0.75 percent, subject to a floor of 5.00 percent. Accrued interest is payable monthly. The Working Capital Line requires that the Company's quick ratio, as defined, be 0.90 or higher. The quick ratio is defined as the sum of cash and accounts receivable divided by the sum of current liabilities, exclusive of current liabilities of discontinued operations. The Company's quick ratio was 2.87 at December 31, 2004. The term of the Working Capital Line expires March, 2006. The available borrowings under the Working Capital Line were approximately \$2.6 million at December 31, 2004, based on the amount of eligible accounts receivable at that date, all of which was unused at December 31, 2004.

In connection with the Working Capital Line, the Company issued warrants to Laurus to purchase 400,000 and 100,000 shares of common stock in March 2003 and January 2004, respectively, at prices ranging from \$1.06 to \$5.15 and paid fees of \$74,400 in March 2003. In connection with the March 2003 issuance, the Company recorded a discount of \$152,318, representing the intrinsic value of the beneficial conversion feature and a discount of \$250,144, representing the fair value of the 400,000 warrants. For the January 2004 issuance, the Company recorded a discount of \$254,691 representing the intrinsic value of the beneficial conversion feature and a discount of \$248,070, representing the fair value of the 100,000 warrants. The fair value of each warrant grant is estimated on the date of issuance using the Black Scholes pricing model with the following assumptions: risk-free interest rate of 2.7

percent for the 2004 warrant and 4.0 percent for the 2003 warrant; expected dividend yield of 0 percent; expected life of 7 years; and expected volatility of 258 percent for the 2004 warrant and 251 percent for the 2003 warrant. At December 31, 2004, the unamortized discount and fees of \$260,125 was included in "prepaid expenses and other" in the accompanying Consolidated Balance Sheet. In addition, there will be an additional beneficial conversion feature in the amount of \$210,923 recorded as additional borrowings are made against the Working Capital Line. The discount is amortized over the remaining life of the Working Capital Line or upon conversion, resulting in \$442,029 and \$289,063 of interest expense for the years ending December 31, 2004 and 2003, respectively. Also included in the discount are other fees paid to Laurus, including annual renewal fees.

The weighted average interest rate on the Laurus Line was 5% for 2004 and 2003. The maximum amount outstanding was \$1,319,208 and \$2,485,255 for 2004 and 2003, respectively, and the average amount outstanding was approximately \$39,677 and \$1,263,000 during 2004 and 2003, respectively. The effective interest rate, including the amortization of the beneficial conversion feature and fair value of warrants was 1,322.50 percent and 41.33 percent in 2004 and 2003, respectively. The 2004 effective interest rate was unusually high due to the low amount of borrowings required during 2004 in comparison to the amortization of the non-cash discount related to the Laurus Line. The weighted average interest rate on the Company's prior line of credit with Comerica Bank ("Comerica Line") was 4.69% for 2002. The maximum amount outstanding under the Comerica Line was \$3,000,000 for 2002, and the average amount outstanding was \$1,393,151 during 2002.

The convertible notes (SAL Notes) were issued to the former shareholders of SAL. The SAL Notes were repaid in February 2004, plus accrued interest, by retiring a total of \$364,239 in notes and \$3,034 in accrued interest with the issuance of 118,121 shares of common stock valued at \$3.11 per share and repaying the remaining amount of \$835,761 in notes and accrued interest of \$6,961 with cash. The \$3.11 per share value was calculated based on 85 percent of the 5 day average closing prices of the Company's stock prior to the last day for the SAL Noteholders to accept the offer. This formula was based on negotiations between the Company and the Noteholders' representative.

Interest paid for the years ended December 31, 2004, 2003 and 2002 was \$242,265, \$314,218 and \$183,466, respectively.

9. Discontinued Operations/Assets Held for Sale

In the first quarter of 2002, the Company decided to discontinue its standard semiconductor products business. Also, during the later half of 2002, the Company concluded that its precision equipment business (JPSI) did not fit with the strategic direction of the Company and that the markets for that business' products would continue to be slow in the near term. Therefore, in December, 2002, the Company decided to initiate the process of selling JPSI and, in July 2003, the Company completed the sale of that business.

The standard semiconductor products business and the precision equipment business have been accounted for in the accompanying consolidated financial statements as discontinued operations.

The loss from operations of discontinued operations of \$214,893 for the year ended December 31, 2004 is related to the standard semiconductor products business. The loss from operations of discontinued operations of \$1,396,749 for the year ended December 31, 2003 consists of \$457,413 related to the standard semiconductor products business (primarily associated with the Irvine facility) and legal costs for disputed liabilities of that business offset in part by gains from settlement of certain liabilities. In addition, for 2003, the loss from discontinued operations includes \$939,336 related to JPSI. The loss from operations of discontinued operations of \$5,839,367 for the year ended December 31, 2002 consists of \$1,856,381 related to the standard semiconductor products business and \$3,982,986 related to JPSI, including a facility reserve of \$206,000.

The Company accounted for the losses of JPSI in accordance with SFAS #144, EITF #94-3 and SAB Topic 5P and, accordingly, recorded certain of the losses in 2002 when management and the Board agreed to a plan to discontinue these operations. The loss on disposal of discontinued operations of \$3,200,000 for the year ended December 31, 2002 relates to the sale of JPSI and includes a write-down of inventory of \$2,502,989 to estimated net realizable value of approximately \$728,000, a write-off of goodwill and other intangible assets of \$370,485 and a write-off of fixed assets of \$326,526. We were not able to find a buyer for the standard semiconductor products business, accordingly, we shut the business down in mid-2002. There was no loss on its disposal because all assets had previously been written off earlier in 2002.

In July 2003, the Company sold JPSI to several private investors and recorded a gain of \$205,000. Under the terms of the sale, JMAR received \$500,000 in a combination of cash and promissory notes, and the buyer assumed 14 of the remaining 25 months of JPSI's facility lease. The notes are secured by the assets of JPSI and the lease obligation is secured by \$50,000 in cash. In addition, all JPSI receivables as of the closing were assigned to JMAR, and JMAR agreed to pay all trade and employee related liabilities existing

as of the closing and unknown liabilities, if any. The buyers have assumed all other ongoing commitments of JPSI. The results of operations of JPSI for 2003 through the sale date are reported in discontinued operations in 2003.

Prior to December 31, 2001, as the level of business expected from the standard semiconductor products business did not materialize, the Company decided to take action to sublease the Irvine facility and move the standard semiconductor products business into a smaller facility and recorded a reserve of \$547,000 against the Irvine facility lease based on an appropriate discount rate and estimated sublease rental income. The lease provides for rent and related expenses of approximately \$36,000 per month through August 2005. In June 2004, the Company subleased the facility at a substantial reduction from the Company's lease payment, however, the sub-tenant defaulted on the sublease in January 2005. The Company continues to reflect losses through December 31, 2004 on this lease primarily because of changes to the Company's expected sublease income and because of the effect of the discounting of the reserve liability. For the years ended December 31, 2003 and 2002, changes in the Company's estimates of sublease income resulted in an increase in the facility reserve of \$150,000 and \$300,000, respectively. In the quarter ended June 30, 2004, the Company reduced its reserve by \$112,000 when it sub-leased the facility, but increased the reserve by an equivalent amount at December 31, 2004 when the sub-tenant defaulted.

At December 31, 2004 and December 31, 2003, net liabilities of assets discontinued and held for sale consisted of the following:

	<u>December 31,</u>	
	<u>2004</u>	<u>2003</u>
Current Liabilities:		
Facility lease accrual	\$ 275,221	\$ 598,466
Accounts payable and accruals	84,284	230,978
Employee related contractual commitments	—	10,384
Note payable	37,444	121,155
	<u>\$ 396,949</u>	<u>\$ 960,983</u>

10. Income Taxes

The tax effects of temporary differences that give rise to significant deferred tax assets and liabilities at December 31, 2004 and 2003 are presented below:

	<u>2004</u>	<u>2003</u>
Deferred tax assets:		
Net operating loss carryforwards	\$ 18,224,000	\$ 19,409,000
Capital loss carryforward	6,843,000	—
Other	1,268,000	575,000
Total gross deferred tax assets	26,335,000	19,984,000
Less valuation reserve	(26,335,000)	(19,984,000)
Net deferred tax asset	<u>\$ —</u>	<u>\$ —</u>

The valuation reserve as of December 31, 2004 and 2003 represents deferred tax assets which management believes, based on the Company's history of operating losses, may not be realized in future periods. The valuation allowance was increased by \$6,351,000 in 2004 and decreased by \$561,000 in 2003. The capital loss carryforward relates to the sale of JPSI, can only be applied against capital gains and expires in 2008. The final determination of the capital loss treatment was not determined until the Company's Federal tax return was filed in September 2004. Because the Company has fully reserved for its deferred tax assets, including the capital loss, the Company has not updated the 2003 footnote disclosure as there is no impact on net deferred tax asset.

The effective income tax rate for the years ended December 31, 2004, 2003 and 2002 varied from the statutory federal income tax rate as follows:

	<u>2004</u>	<u>2003</u>	<u>2002</u>
Statutory federal income tax rate	(34)%	(34)%	(34)%
State income tax	(6)	(6)	(6)
Valuation allowance	—	—	25
Benefit recorded due to net operating loss carryforward position	40	40	40
	<u>—%</u>	<u>—%</u>	<u>25%</u>

At December 31, 2004, the Company had Federal net operating loss carryforwards expiring as follows:

Expires	
2005	\$ 2,840,000
2006	961,000
2007	4,546,000
2008	6,932,000
2009	6,860,000
2010	2,265,000
2011	585,000
2019	731,000
2020	2,603,000
2021	1,295,000
2022	10,869,000
2023	4,597,000
2024	<u>5,142,000</u>
Total	<u>\$ 50,226,000</u>

In addition to the capital loss carryforward, the Company has approximately \$3,170,000 of temporary differences that will offset future taxable income subject to the change in ownership limitations discussed below. Also, the Company has approximately \$12.6 million of state net operating loss carryforwards that expire from 2006 to 2014.

Realization of future tax benefits from utilization of the net operating loss carryforwards for income tax purposes is limited by the change in ownership (as defined for Federal Income Tax Reporting Purposes) as a result of the Company's initial public offering in May 1990. As a result of additional financings in 1992 and 1993, additional ownership changes have occurred which restrict the Company's ability to utilize its net operating loss carryforwards and any "built in losses." In addition, the net operating losses of acquired companies are also subject to separate change of ownership limitations. Of the above net operating loss carryforwards, annual limitations of approximately \$695,000 apply to approximately \$3,599,000 of Company and acquired company loss carryforwards. Approximately \$46,627,000 of the net operating loss carryforwards are not subject to annual limitations.

11. Equity Transactions

a. Laurus Preferred Stock and Warrants

In 2004 and 2003, the Company sold the following series of Preferred Stock to Laurus for cash:

Issuance Date	Series	Amount	Dividend	Original Conversion Price	Converted in 2003		Converted in 2004	
					Amount	Shares Issued	Amount	Shares Issued
March, 2003	A	\$ 1,000,000	8%	\$ 0.88	\$ 1,000,000	1,136,363	—	—
March, 2003	B	1,000,000	3%	\$ 0.88	1,000,000	1,136,364	—	—
September, 2003	C	1,500,000	8%	\$ 2.08	—	—	\$ 1,500,000	721,154
December, 2003	D	2,000,000	8%	\$ 1.56	—	—	2,000,000	1,282,051
January, 2004	E	1,500,000	8%	\$ 2.85 (1)	—	—	—	—
February, 2004	F	2,000,000	Prime (2)	\$ 3.11 (1)	—	—	—	—
February, 2004	G	2,000,000	Prime (2)	\$ 3.28 (1)	—	—	—	—
February, 2004	H	4,000,000	Prime (2)	\$ 3.47 (1)	—	—	—	—
		<u>\$ 15,000,000</u>			<u>\$ 2,000,000</u>	<u>2,272,727</u>	<u>\$ 3,500,000</u>	<u>2,003,205</u>

(1) Reduced to \$2.00 pursuant to February 1, 2005 agreement (see below)

(2) Prime rate at December 31, 2004 was 5.25 percent

If not previously converted to common stock, the outstanding amount of Series E, F, G and H Preferred Stock must be redeemed in cash (or it can be redeemed in common stock if the closing market price of the Company's common stock is 118% of the Conversion Price or higher for the 11 trading days prior to the redemption date) at various amounts and dates (see below). Conversions to equity are offset against the required repayments. Except for the conversion price, the conversion terms of the Series E through H Preferred Stock are the same as the conversion terms of the Working Capital Line (see Note 8).

On February 1, 2005, the Company entered into agreements with Laurus amending the Company's Series E, F, G and H Convertible Preferred Stock (Amendments). The Amendments provide for 1) the deferral of approximately \$3.8 million in monthly redemption payments, as follows: a) payments of the remaining 12 months of redemption payments (\$83,333 per month) for the Series

E Preferred Stock are deferred until July, 2006, and b) the next 18 months of redemption payments due under the Series F, G and H Convertible Preferred Stock (\$150,000 per month) are deferred until February, 2007; 2) the grant of a right to the Company to elect to pay the originally scheduled monthly redemption payments with shares of the Company's Common Stock valued at a 15% discount to the then market price; and 3) the reduction in the conversion prices of the Series E-H Preferred Stock (originally ranging from \$2.85 to \$3.47) to \$2.00 per share. The monthly redemption payments under the Series F-H Preferred Stock will recommence in August, 2006 until January, 2007, with the balance of approximately \$4.25 million in the stated amount of the Series F-H Preferred Stock due in February, 2007. These redemption payments will be reduced to the extent that there are conversions of the Preferred Stock into Common Stock.

If not previously converted, the Series E through H Preferred Stock, as amended, must be redeemed by the Company as follows:

Description	Gross Amount Outstanding at December 31, 2004		Scheduled Redemptions		Total
	2005	2006	2007		
Series E Preferred	\$ 1,083,333	\$ 83,333	\$ 1,000,000	\$ —	\$ 1,083,333
Series F Preferred	\$ 2,000,000	37,500	187,500	1,775,000	2,000,000
Series G Preferred	\$ 2,000,000	37,500	187,500	1,775,000	2,000,000
Series H Preferred	\$ 4,000,000	75,000	375,000	3,550,000	4,000,000
		<u>\$ 233,333</u>	<u>\$ 1,750,000</u>	<u>\$ 7,100,000</u>	<u>\$ 9,083,333</u>

In connection with all of the above financing transactions with Laurus, including related to the Working Capital Line, the Company issued warrants to Laurus to purchase a total of 1,390,000 shares of common stock at prices ranging from \$1.058 to \$5.15. In addition, Laurus was granted the right to receive a warrant to purchase one share of common stock at \$3.13 for every \$20 of principal of the Working Capital Line that is converted to equity up to a total of 50,000 shares. As of February 1, 2005 all of the preferred stock, warrants and Working Capital Line held by Laurus is convertible or exercisable into approximately 5.8 million shares.

As a result of the convertible preferred stock and warrants issued in 2004 and 2003, the Company recorded a discount representing the beneficial conversion feature of the preferred stock and the fair value of the warrants issued of approximately \$1.3 million and \$1.8 million, respectively. The beneficial conversion feature was recognized as a reduction of preferred stock and is amortized to loss applicable to common stock over the earlier of the redemption period or the conversion dates. The unamortized discount, including fees and costs, was \$996,059 and \$1,282,850 at December 31, 2004 and 2003, respectively.

The following table summarizes the preferred stock activity for 2003:

Series	Financing						Net Balance at December 31, 2003
	Gross Amount	BCF	Fair Value of Warrants	Fees and Costs	Discount Amortization	Conversions	
A	\$ 1,000,000	\$ 195,068	\$ 115,522	\$ 63,900	\$ 374,490	\$ 1,000,000	\$ —
B	1,000,000	195,067	115,522	68,517	379,106	1,000,000	—
C	1,500,000	379,924	257,327	72,000	84,474	—	875,223
D	2,000,000	321,179	269,896	93,250	26,252	—	1,341,927
	<u>\$ 5,500,000</u>	<u>\$ 1,091,238</u>	<u>\$ 758,267</u>	<u>\$ 297,667</u>	<u>\$ 864,322</u>	<u>\$ 2,000,000</u>	<u>\$ 2,217,150</u>

The fair value of each warrant grant in 2003 was estimated on the date of issuance using the Black Scholes pricing model with the following assumptions: risk-free interest rate ranging from 2.7 percent to 4.0 percent; expected dividend yield of 0 percent; expected life of 7 years; and expected volatility of 247 percent to 251 percent.

The following table summarizes the preferred stock activity for 2004:

Series	Net Balance at December 31, 2003	Financing						Net Balance at December 31, 2004
		Gross Amount	BCF	Fair Value of Warrants	Fees and Costs	Discount Amortization	Conversions	
C	\$ 875,223	\$ —	\$ —	\$ —	\$ —	\$ 624,777	\$ 1,500,000	\$ —
D	1,341,927	—	—	—	—	658,073	2,000,000	—
E	—	1,500,000	381,609	218,451	62,000	331,033	—	416,667
F	—	2,000,000	54,250	144,282	72,062	82,686	—	—
G	—	2,000,000	—	151,571	72,062	68,332	—	—
H	—	4,000,000	—	319,301	144,125	141,603	—	—
	<u>\$2,217,150</u>	<u>\$ 9,500,000</u>	<u>\$ 435,859</u>	<u>\$ 833,605</u>	<u>\$ 350,249</u>	<u>\$ 1,906,504</u>	<u>\$3,500,000</u>	<u>\$ 416,667</u>
								<u>\$ 8,087,274</u>

The fair value of each warrant grant in 2004 was estimated on the date of issuance using the Black Scholes pricing model with the following assumptions: risk-free interest rate of 2.7 percent; expected dividend yield of 0 percent; expected life of 7 years; and expected volatility of 258 percent to 262 percent. No beneficial conversion feature was recorded on the Series G and H preferred stock as the conversion price was higher than the market price of the Company's common stock at the commitment date.

All of the preferred stock, warrants and the Working Capital Line (Securities) held by Laurus contain provisions that restrict the right of Laurus to convert or exercise its JMAR securities in order to limit its percentage beneficial ownership. If Laurus were to waive these beneficial ownership limitations the Securities would be convertible for or exercisable into more than 4.99% of the outstanding shares of the Company's common stock commencing 75 days after notice of such waiver. However, Laurus has not requested such a waiver. Laurus has also agreed that none of the Securities shall be converted or exercised to the extent that conversion or exercise of the Securities would result in Laurus beneficially owning more than 19.9% of the Company's outstanding number of shares of common stock unless and until the Company obtains stockholder approval in accordance with NASDAQ corporate governance rules, or an exemption from the applicable provision of NASDAQ corporate governance rules.

Included in the loss applicable to common stock in the accompanying Consolidated Statement of Operations for the years ended December 31, 2004 and 2003 are preferred stock dividends of \$2,247,876 and \$942,903, respectively. The amount for the years ended December 31, 2004 and 2003 represents \$341,372 and \$78,581, respectively, of preferred stock dividends paid or payable in cash and \$1,906,504 and \$864,322, respectively, related to the discount representing the beneficial conversion feature of the redeemable convertible preferred stock and the fair value of warrants issued in connection with the preferred stock.

b. Issuance of Warrants

A summary of the status of the total number of warrants as of December 31, 2004, 2003 and 2002 and changes during the years then ended is presented in the tables below:

	2004		2003		2002	
	Shares	Wtd Avg Ex Price	Shares	Wtd Avg Ex Price	Shares	Wtd Avg Ex Price
Outstanding at beg. of year	1,830,720	\$ 1.37	1,422,643	\$ 2.49	1,252,643	\$ 2.41
Granted	440,000	4.09	1,100,000	1.62	170,000	2.49
Exercised	(1,750)	1.00	(144,068)	2.01	—	—
Forfeited	—	—	(547,855)	4.45	—	—
Outstanding at end of year	<u>2,268,970</u>	1.94	<u>1,830,720</u>	1.42	<u>1,422,643</u>	2.49
Exercisable at end of year	<u>2,240,345</u>		<u>1,780,720</u>		<u>1,422,643</u>	
Weighted average fair value of warrants granted	2.94		1.19		2.22	

A summary of outstanding warrants as of December 31, 2004, the range of exercise prices, the weighted-average exercise price, the weighted-average remaining contractual life, the amount of warrants currently exercisable and the weighted-average exercise price of warrants currently exercisable is as follows:

Range of Exercise Prices	Warrants Outstanding			Warrants Exercisable	
	Number Outstanding at 12/31/04	Weighted-Average Remaining Contractual Life	Weighted-Average Exercise Price	Number Exercisable at 12/31/04	Weighted-Average Exercise Price
\$ 0.43 to \$ 0.50	517,470	4.0 Years	\$ 0.43	517,470	\$ 0.43
1.00 to 1.33	707,500	5.1	1.12	707,500	1.12
2.05 to 2.64	574,000	4.4	2.40	574,000	2.40
3.00 to 3.88	255,000	5.9	3.56	226,375	3.62
5.00 to 5.15	<u>215,000</u>	5.3	5.07	<u>215,000</u>	5.07
\$ 0.43 to \$ 5.15	<u>2,268,970</u>			<u>2,240,345</u>	

c. Settlement of SAL Earn-out Obligations

In August, 2004, holders of more than 99 percent of the SAL earn-out interests (see Note 3) accepted the Company's offer to receive payment of \$625,000 in common stock, valued at the average of the closing prices of JMAR's common stock for the five trading days during the period August 18, 2004 to August 24, 2004 (\$1.31). The additional consideration of \$625,000 is included in goodwill on the accompanying Consolidated Balance Sheet.

d. Other Equity Transactions

During 2004 and 2003, \$1,254,500 and \$1,173,000, respectively, of the Working Capital Line (see Note 9) was converted into 1,048,913 and 1,275,000 shares, respectively, of common stock of the Company.

In February, 2003, under the Company's Shelf Registration Statement, the Company sold 100,000 shares of its common stock and a warrant for 20,000 shares, exercisable at \$1.25 per share, for gross proceeds of \$100,000.

In March 2002, under the Shelf Registration Statement, the Company sold 1 million shares of its common stock for gross proceeds of \$2 million less offering costs of approximately \$220,000. In connection with this transaction, the Company issued to the purchasers warrants to purchase 150,000 shares of its common stock at an exercise price of \$2.50 per share, expiring in March 2006. Also, the Company paid a placement agent a fee of 6% of the gross proceeds, a \$25,000 non-accountable expense allowance and issued warrants to purchase 20,000 shares of the Company's common stock at an exercise price of \$2.40 per share. The warrants to purchase 170,000 shares of the Company's common stock were valued at approximately \$305,000 based on the Black Scholes pricing model. The warrants were recorded in the accompanying consolidated financial statements as paid-in-capital with a corresponding reduction in the amount assigned to the common stock issued.

During the years ended December 31, 2004 and 2003, the Company received net proceeds of \$157,274 and \$289,577, respectively, from the exercise of warrants and options into 71,933 and 144,068 shares of common stock, respectively.

During 2004, 2003 and 2002, the Company issued 11,604, 11,026 and 11,632 shares of common stock for services and other obligations. These issuances were valued based upon the fair market value of the Company's common stock at the date of issue.

12. Stock-Based Compensation Plans

The Company has six stock option plans, the 1991 Stock Option Plan (1991 Plan), the 1999 Stock Option Plan (1999 Plan), the Management Anti-Dilution Plan (Anti-Dilution Plan), an incentive plan which provided for the issuance of options to JPSI employees (JPSI Plan) and two incentive plans which provide for the issuance of options to Research Division employees (Research Division Plans). The Company is also a party to non-plan option agreements with several individuals.

The Company was authorized to grant options to its employees (including directors) and consultants for up to 1,480,000 shares under the 1991 Plan, 1,900,000 shares under the 1999 Plan, 806,637 shares under the Anti-Dilution Plan, 450,000 shares under the JPSI Plan and 350,000 shares under the Research Division Plans (Plans). No further option grants are allowed except under the 1999 Plan. As of December 31, 2004, the Company has granted 1,189,352 options under the 1991 Plan, 1,189,446 options under the 1999 Plan, 306,920 options under the Anti-Dilution Plan, 33,000 options under the JPSI Plan and 65,500 options under the Research Division Plans. In addition, 560,000 non-qualified options have been granted to three employees outside of the above plans. Except as noted in the next sentence, under all Plans the option exercise price was equal to or more than the market price of JMAR's common stock on date of grant in 2004, 2003 and 2002, and no compensation expense was recognized. Options for a total of 7,500 shares were granted to the Company's directors in payment of meeting fees in 2004, which had an exercise price of \$1.00 below the market price resulting in compensation expense of \$7,500. Options usually have a term of ten years and vest one-third per year after date of grant. As of December 31, 2004, options to purchase 710,554 shares are available for grant pursuant to the 1999 Plan.

A summary of the status of the total number of employee stock options pursuant to all of the above plans as of December 31, 2004, 2003 and 2002 and changes during the years then ended is presented in the tables below:

	2004		2003		2002	
	Shares	Wtd Avg Ex Price	Shares	Wtd Avg Ex Price	Shares	Wtd Avg Ex Price
Outstanding at beg. of year	3,028,247	\$ 2.43	3,214,834	\$ 2.93	2,436,802	\$ 3.53
Granted	263,500	1.68	489,500	1.05	898,800	1.48
Exercised	(66,183)	2.25	—	—	—	—
Forfeited	(297,726)	3.34	(676,087)	3.50	(120,768)	4.04
Outstanding at end of year	<u>2,927,838</u>	2.27	<u>3,028,247</u>	2.43	<u>3,214,834</u>	2.93
Exercisable at end of year	<u>2,073,462</u>		<u>1,945,969</u>		<u>1,977,859</u>	
Weighted average fair value of options granted	1.69		0.92		1.38	

A summary of the options outstanding as of December 31, 2004, the range of exercise prices, the weighted-average exercise price, the weighted-average remaining contractual life, the amount of options currently exercisable and the weighted-average exercise price of options currently exercisable is as follows:

Range of Exercise Prices	Options Outstanding			Options Exercisable	
	Number Outstanding at 12/31/04	Weighted-Average Remaining Contractual Life	Weighted-Average Exercise Price	Number Exercisable at 12/31/04	Weighted-Average Exercise Price
\$ 0.53 to \$ 0.90	356,856	7.7 years	\$ 0.87	140,189	\$ 0.82
1.02 to 1.44	875,200	7.4	1.31	491,867	1.28
1.56 to 2.44	630,963	5.5	2.05	427,967	2.13
2.53 to 3.00	603,545	3.6	2.90	584,045	2.90
3.13 to 9.50	461,274	5.1	4.66	429,394	4.77
\$ 0.53 to \$ 9.50	<u>2,927,838</u>			<u>2,073,462</u>	

13. Segment Information

JMAR conducts its operations in the following four business segments:

Research Division (formerly JMAR Research) – Located in San Diego, California, this segment carries out contract research and development involving JMAR’s patented high brightness, short-pulse, diode pumped solid state lasers (Britelight™) and laser-produced plasma (LPP) technology. A major portion of the Research Division’s R&D has been funded by contracts from DARPA of the U.S. Department of Defense. This segment’s historic focus on X-ray lithography light source R&D and equipment development was expanded in 2004 when it embarked on an effort to identify additional uses for its laser and LPP technologies. As a result of this business expansion investigation, this segment is developing several soft X-ray enabled products including a Compact X-ray Microscope and a family of instruments for nanotechnology applications. JMAR believes that this instrument family will provide the ability to carry out chemical analysis, chemical vapor deposition, and machining at resolutions down to 20 nm. During 2004, this segment accounted for approximately 35% of the Company’s revenues.

New products are developed at the Research Division based on contract and internally funded R&D and then transitioned to JMAR’s Vermont Operations for product engineering and production.

Vermont Operations (formerly JSAL) – Located in South Burlington, Vermont, this segment carries out contract research and development involving nanolithography and serves as JMAR’s manufacturing arm, carrying out the manufacturing engineering, production, integration and test of JMAR’s new products. The Vermont Operations also applies its program management, engineering and manufacturing expertise to the contract development and production of new products using the customer’s technology. As an example, the Vermont Operations is the design and manufacturing contractor for FemtoTrace, Inc. building the READ trace chemical sensors for real time detection of extremely small quantities of organics. The READ equipment has uses in environmental contamination detection and homeland security applications. The Vermont Operations will also introduce a novel Optical Angular Scanning Imaging System (OASIS) for biological medical and materials research applications in 2005. OASIS is a versatile, rapid scanning optical microscope that combines high magnification, fine optical resolution, and rapid scanning motion control. This segment also performs funded contract research and development for DARPA. During 2004, this segment accounted for approximately 28% of the Company’s revenues.

Microelectronics Division (formerly JMAR Semiconductor) – This segment provides process integration and maintenance support to the Defense Microelectronics Activity’s semiconductor fabrication facility in McClellan, California. It also designs and produces application specific integrated circuits (ASICs) for military and commercial markets and is developing application specific standard products. During 2004, this segment accounted for approximately 37% of the Company’s revenues.

Sensor Products Group – This segment’s first product is the BioSentry™, a laser-based early-warning system that provides continuous, real-time surveillance, detection and classification of waterborne microorganisms. Prospective applications include beverage bottling quality assurance, water utility operations, cruise ship water monitoring and homeland security for building water supply and water distribution systems. During 2004, there were no revenues from this segment. Revenues are expected in 2005.

The accounting policies of the reportable segments are the same as those described in Note 2. The Company evaluates the performance of its operating segments primarily based on revenues and operating income. Corporate costs are generally allocated to the segments.

Segment information for the years ended December 31, 2004, 2003 and 2002 (excluding discontinued operations) is as follows:

	Research Division	Vermont Operations	Microelectronics Division	Sensor Products Group	Corporate	Total
2004:						
Revenues	\$ 3,575,633	\$ 2,785,929	\$ 3,698,277	\$ —	\$ —	\$ 10,059,839
Patent write-downs	(191,575)	—	—	—	—	(191,575)
Operating loss	(1,306,568)	(1,757,025)	(600,759)	(1,089,453)	—	(4,753,805)
Total assets	3,239,951	5,210,423	1,895,020	17,636	7,063,068	17,426,098
Goodwill	—	4,415,932	—	—	—	4,415,932
Capital expend.	15,920	18,978	160,845	17,636	194,659	408,038
Depreciation & amortization	163,314	189,112	50,337	1,748	609,060	1,013,571
2003:						
Revenues	6,206,123	6,561,372	4,529,013	—	—	17,296,508
Patent & equip. write-downs	(346,060)	—	—	—	—	(346,060)
Oper. income (loss)	152,738	(1,455,035)	151,242	—	(267,569)	(1,418,624)
Total assets	3,119,115	4,626,299	1,708,504	—	4,039,265	13,493,183
Goodwill	—	3,790,907	—	—	—	3,790,907
Capital expend.	38,349	13,449	61,767	—	9,828	123,393
Depreciation & amortization	226,995	311,857	24,427	—	375,439	938,718
2002:						
Revenues	6,951,114	7,602,336	3,830,360	—	—	18,383,810
Deferred comp.	—	—	—	—	(1,074,324)	(1,074,324)
Oper. income (loss)	228,963	(1,498,007)	268,018	—	(2,108,828)	(3,109,854)
Total assets	2,775,418	5,897,912	1,694,927	—	3,403,645	13,771,902
Goodwill	—	3,790,907	—	—	—	3,790,907
Capital expend.	311,890	52,144	28,021	—	1,509	393,564
Depreciation & amortization	369,940	307,614	14,837	—	84,926	777,317

The patent and equipment write-downs for 2003 of \$346,060 includes \$200,056 related to an asset held by the Research Division that will not be used by the Company in the future and \$146,004 of patent costs. The deferred compensation for 2002 of \$1,074,324 relates to the retirement benefits recorded in August 2002 associated with the retirement of the Company's former Chairman and Chief Executive Officer.

Significant Customers

Sales to the United States Government aggregated \$5,386,526, \$11,868,974 and \$12,484,601 in 2004, 2003 and 2002, respectively. Accounts receivable from the United States Government at December 31, 2004 and 2003 was \$2,071,341 and \$2,146,720, respectively. In addition, sales to General Dynamics Advanced Information Systems (GDAIS) were \$3,692,223, \$2,712,770 and \$4,306,801 in 2004, 2003 and 2002, respectively. Accounts receivable from GDAIS at December 31, 2004 and 2003 was \$847,584 and \$471,506, respectively.

Export Sales

For the years ended December 31, 2004, 2003 and 2002, all revenues were generated from the United States and all assets of the Company are located in the United States.

14. Quarterly Financial Information (Unaudited)

The following is a summary of unaudited quarterly results for the years ended December 31, 2004 and 2003:

Year Ended December 31, 2004	Revenues	Gross Profit	Gain (Loss) from Discontinued Operations	Loss Applicable to Common Stock	Loss Per Share		Weighted Average Shares Outstanding
					Continuing Operations	Discontinued Operations	
December 31	\$ 1,755,289	\$ 448,626	\$ (174,793)	\$ (2,504,241)	\$ (0.07)	\$ (0.01)	31,374,439
September 30	2,257,737	214,819	(52,549)	(1,929,816)	(0.06)	—	31,088,814
June 30	3,011,437	669,842	74,546	(1,322,001)	(0.04)	—	30,885,182
March 31	3,035,376	665,453	(62,097)	(2,123,958)	(0.07)	—	29,660,437
	<u>\$ 10,059,839</u>	<u>\$ 1,998,740</u>	<u>\$ (214,893)</u>	<u>\$ (7,880,016)</u>	(0.25)	(0.01)	30,758,689
Year Ended December 31, 2003	Revenues	Gross Profit	Gain (Loss) from Discontinued Operations	Loss Applicable to Common Stock	Loss Per Share		Weighted Average Shares Outstanding
December 31	\$ 3,570,210	\$ 1,098,602	8,741	\$ (684,621)	\$ (0.03)	\$ —	26,992,354
September 30	3,964,930	983,222	(53,673)	(1,063,451)	(0.04)	—	25,500,260
June 30	5,027,654	971,819	(686,830)	(1,561,214)	(0.03)	(0.03)	24,236,140
March 31	4,733,714	910,984	(459,987)	(912,080)	(0.02)	(0.02)	23,886,503
	<u>\$ 17,296,508</u>	<u>\$ 3,964,627</u>	<u>\$ (1,191,749)</u>	<u>\$ (4,221,366)</u>	(0.12)	(0.04)	25,618,296

The Company continued to incur losses from discontinued operations in 2004 primarily related to the lease of the Irvine facility. In 2003, the losses from discontinued operations primarily related to the lease of the Irvine facility and legal costs for disputed liabilities of that business, offset in part by gains from settlement of certain liabilities (see Note 9).

15. Intangible Assets

The Company adopted SFAS No. 142 "Goodwill and Other Intangible Assets" (SFAS 142) effective January 1, 2002. In accordance with SFAS 142, the Company does not amortize goodwill. The Company's goodwill of \$4,415,932 and \$3,790,907 at December 31, 2004 and 2003, respectively, is related to the acquisition of SAL, Inc. in August, 2001. As of December 31, 2004 and 2003, the Company had the following amounts related to other intangible assets:

	December 31, 2004			December 31, 2003		
	Gross Carrying Amount	Accumulated Amortization	Net Intangible Assets	Gross Carrying Amount	Accumulated Amortization	Net Intangible Assets
Patents	\$ 908,032	\$ 489,174	\$ 418,858	\$ 953,124	\$ 421,583	\$ 531,541
Unpatented Technology	450,000	450,000	—	450,000	362,500	87,500
License	126,250	7,917	118,333	65,000	—	65,000
			<u>\$ 537,191</u>			<u>\$ 684,041</u>

During 2004, the Company spent \$159,770 and \$61,250 on patent cost and licenses, respectively. The Research Division accounted for \$158,413 of the patent costs and \$21,250 of the license costs, while the Microelectronics Division accounted for \$1,357 of the patent costs and \$40,000 of the license costs.

Aggregate amortization expense of the intangible assets with determinable lives was \$163,008, \$282,055 and \$379,205 for the years ended December 31, 2004, 2003 and 2002, respectively. The unamortized balance of intangible assets is estimated to be amortized as follows:

For the Year Ending December 31,	Estimated Amortization Expense
2005	\$ 17,840
2006	62,064
2007	62,064
2008	62,064
2009	62,064
Beyond	271,095
	<u>\$ 537,191</u>

16. Subsequent Events (Unaudited)

On February 1, 2005, the Company entered into a Securities Purchase Agreement and completed the sale of \$4 million of the Company's Common Stock and Warrants to five institutional investors (Investors). Pursuant to the Securities Purchase Agreement, the Company issued a total of 3,225,807 shares of Common Stock at \$1.24 per share and Warrants to purchase 1,209,679 shares of Common Stock to the Investors. The Warrants have an exercise price of \$1.73 per share and a term of five years. After expenses of the transaction and the advisor's fee, the Company received approximately \$3,852,000. In addition, on February 1, 2005, the Company entered into agreements with Laurus to amend the Company's Series E, F, G and H Convertible Preferred Stock (Amendment) (see Note 11).

As a result of the Amendment in February 2005, the Company will record an additional discount representing the difference between the fair value of the Preferred Stock immediately prior to and after the Amendment, which management has estimated to be approximately \$1.1 million valued based on the Black Scholes pricing model using the following assumptions: risk-free interest rate of 3.23 percent based on estimated yields of 2-year U.S. Treasury Securities; expected dividend yield of 0 percent; remaining contractual life of 2 years; and expected volatility of 108 percent. The volatility is based on JMAR's historical stock prices for the past two years, consistent with the remaining contractual life of the preferred stock. This amount will be recorded during the first quarter of fiscal year 2005 as a reduction of preferred stock and amortized to preferred stock dividends over the earlier of the redemption payment period or the conversion dates (see Note 11).

In February 2005, DARPA released the remaining \$3,508,000 in funds related to the Company's DARPA Contract.

EXECUTIVE OFFICERS

Ronald A. Walrod

Chief Executive Officer and President
JMAR Technologies, Inc.

Dennis E. Valentine, CPA

Vice President, Finance and Chief Financial Officer
JMAR Technologies, Inc.

Joseph G. Martinez, J.D.

Senior Vice President and General Counsel
JMAR Technologies, Inc.

John P. Ricardi

Vice President, Sensor Products

Larry R. Johnson

General Manager, Microelectronics Division

Scott H. Bloom, Ph.D.

General Manager, Research Division
Vice President, JMAR Technologies, Inc.

Douglas Cheng

Vice President, Operations
Vermont Operations

Robert A. Selzer

Senior Vice President, Technology
Vermont Operations

David L. McCarty

Vice President, Business Development
JMAR Technologies, Inc.

BOARD OF DIRECTORS

Vernon H. Blackman, Ph.D.

Chairman of the Board

C. Neil Beer, Ph.D.

Executive Vice President
Computer Technology Associates, Inc.

Charles A. Dickinson

Consultant

J. Paul Gilman, Ph.D.

Director
Oak Ridge Center for Advanced Studies

Edward P. O'Sullivan II

Managing Partner
CFO Connect, LLC

Barry Ressler

Director and Chief Executive Officer
Triton Thalassic Technologies, Inc.

Ronald A. Walrod

Chief Executive Officer and President
JMAR Technologies, Inc.

CORPORATE OFFICES

Corporate Headquarters

JMAR Technologies, Inc.
5800 Armada Drive
Carlsbad, CA 92008
(760) 602-3292

Microelectronics Division

4235 Forcum Avenue
McClellan, CA 95652
(916) 648-2089

Research Division

3956 Sorrento Valley Blvd
San Diego, CA 92121
(858) 535-1706

Vermont Operations

21 Gregory Drive
South Burlington, VT 05403
(802) 652-0055

Sensor Products Group

1334 Industrial Avenue
Escondido, CA 92029
(760) 740-5192

MISCELLANEOUS INFORMATION

Stock Registrar and Transfer Agent
Computershare Trust Co., Inc.
350 Indiana Street
Golden, CO 80401
(303) 262-0600

Independent Auditors

Grant Thornton LLP
18400 Von Karman
Irvine, CA 92612

Annual Meeting of Shareholders
Friday, June 24, 2005, 10:00 AM
Marriott
2000 Faraday Avenue
Carlsbad, CA 92008
(760) 431-9999

